



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

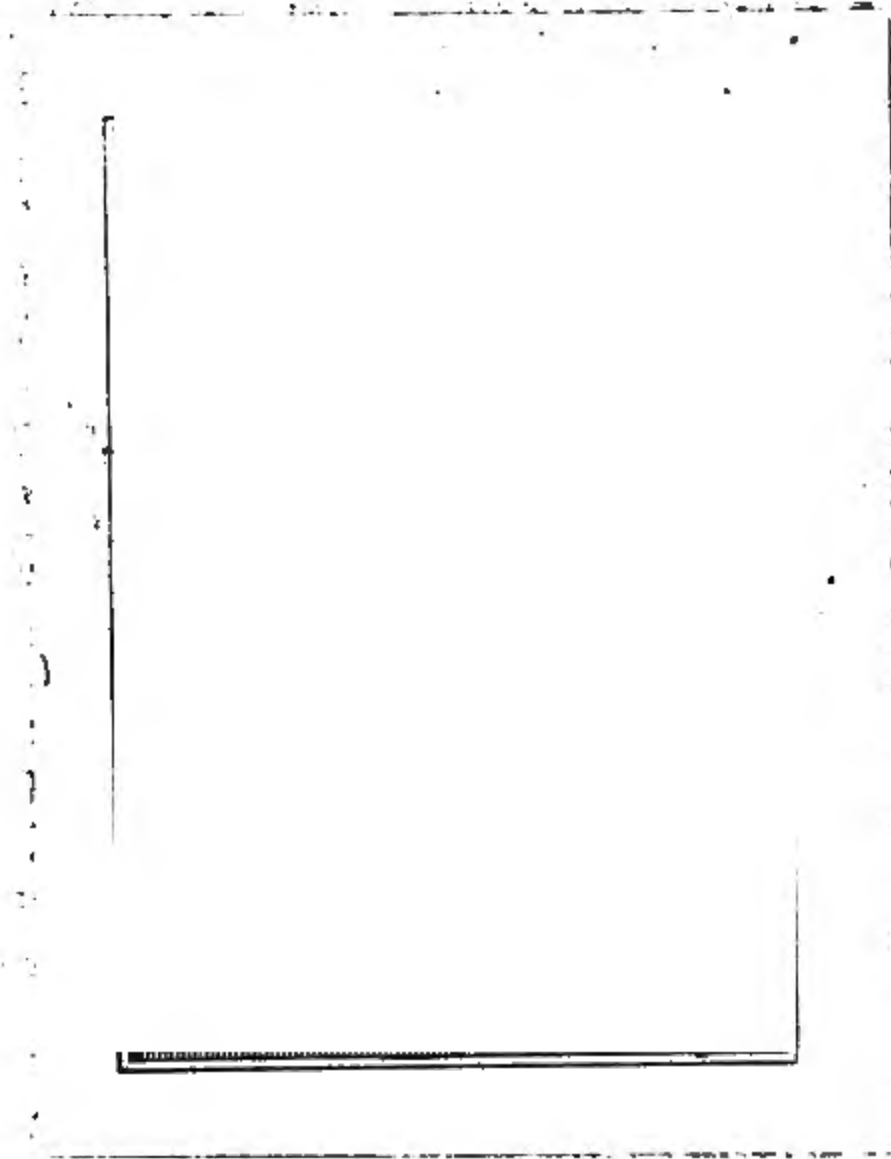
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



LD

34A7

378.73

M68 H

Read what Governor Stone and Governor
Stephens say about Endowing the
University. Pages 2-7

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF MISSOURI

FIFTY-FIFTH REPORT

OF THE

CURATORS

To the Governor of the State

1896-1897.

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF MISSOURI

FIFTY-FIFTH REPORT

OF THE

CURATORS

To the Governor of the State

1896--1897

COLUMBIA, MISSOURI

1897							1898													
JULY.							JANUARY.							JULY.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	..	..	..	..	..	1	..	..	..	..	..	1	2
4	5	6	7	8	9	10	2	3	4	5	6	7	8	3	4	5	6	7	8	9
11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16
18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23
25	26	27	28	29	30	31	23	24	25	26	27	28	29	24	25	26	27	28	29	30
..	..	..	..	..	..	..	30	31	..	..	..	..	..	31	..	..	..	..	..	..
AUGUST.							FEBRUARY.							AUGUST.						
1	2	3	4	5	6	7	..	..	1	2	3	4	5	..	..	..	..	..	..	..
8	9	10	11	12	13	14	6	7	8	9	10	11	12	..	1	2	3	4	5	6
15	16	17	18	19	20	21	13	14	15	16	17	18	19	7	8	9	10	11	12	13
22	23	24	25	26	27	28	20	21	22	23	24	25	26	14	15	16	17	18	19	20
29	30	31	..	..	..	..	27	28	..	..	..	..	..	21	22	23	24	25	26	27
..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	29	30	31	..	..	..
SEPTEMBER.							MARCH.							SEPTEMBER.						
..	..	..	1	2	3	4	..	..	1	2	3	4	5	..	..	..	..	1	2	3
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10
12	13	14	15	16	17	18	13	14	15	16	17	18	19	11	12	13	14	15	16	17
19	20	21	22	23	24	25	20	21	22	23	24	25	26	18	19	20	21	22	23	24
26	27	28	29	30	..	..	27	28	29	30	31	..	..	25	26	27	28	29	30	..
OCTOBER.							APRIL.							OCTOBER.						
..	..	..	..	..	1	2	..	..	..	..	..	1	2	..	..	..	..	..	..	1
3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	24	25	26	27	28	29	30	23	24	25	26	27	28	29
31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..
NOVEMBER.							MAY.							NOVEMBER.						
..	1	2	3	4	5	6	..	..	..	..	..	..	..	..	..	1	2	3	4	5
7	8	9	10	11	12	13	1	2	3	4	5	6	7	6	7	8	9	10	11	12
14	15	16	17	18	19	20	8	9	10	11	12	13	14	13	14	15	16	17	18	19
21	22	23	24	25	26	27	15	16	17	18	19	20	21	20	21	22	23	24	25	26
28	29	30	..	..	..	..	22	23	24	25	26	27	28	27	28	29	30	..	..	..
..	..	..	..	..	..	..	29	30	31	..	..	..	..	..	..	..	..	..	..	..
DECEMBER.							JUNE.							DECEMBER.						
..	..	..	1	2	3	4	..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	31	..	26	27	28	29	30	..	..	25	26	27	28	29	30	31

UNIVERSITY CALENDAR.

AT COLUMBIA.

1897—September 9, 10, 11, 13.....	Entrance Examinations
September 14, Tuesday.....	All Departments Open
November 24, Wednesday, 4 p. m., to November	
29, Monday, 8:30 a. m.....	Thanksgiving Holidays
December 14, Tuesday.....	Semi-annual meeting of the Curators
December 23, Thursday, at 4 p. m., to }	
1898—January 4, Tuesday, at 8:30 a. m. }	Christmas Holidays
January 9, Sunday.....	Memorial Day
January 21-29	Mid-Year Examinations
February 1, Tuesday.....	Second Semester Begins
February 22, Tuesday.....	Holiday
May 27 to June 4.....	Final Examinations
June 4, Saturday.....	Stephens Medal Contest
June 5, Sunday.....	Baccalaureate Sermon
June 6, Monday.....	Class Day
June 7, Tuesday.....	Alumni Day
June 7, Tuesday.....	Annual Meeting of the Curators
June 8, Wednesday.....	Commencement Day

AT ROLLA.

1897—September 13, Monday, 9 a. m.....	Entrance Examinations
September 14, Tuesday.....	First Term Begins
November 25, Thursday.....	Thanksgiving Holiday
December 24, Friday, at 12 m., to }	
1898—January 3, Monday..... }	Christmas Holidays
January 3, Monday.....	Second Term Begins
February 22, Monday....	Holiday
March 20, Monday.....	Third Term Begins
June 14, Tuesday.....	Annual Meeting of Executive Committee
June 15, Wednesday.....	Commencement

CONTENTS.

	Page
GENERAL STATEMENT—Calendar.....	11- 111
Report of the Board of Curators.....	1- 7
Corporation.....	8
General Faculty.....	9- 13
Officers, Preachers and Lecturers.....	13- 14
GENERAL INFORMATION.....	15- 37
A. AT COLUMBIA.....	15- 35
Historical Statement.....	15
Buildings and Equipment.....	15- 18
Lectures, Recitations and Religious Exercises.....	18
Provisions for Young Women.....	19
Directions for new Students.....	20
Regulations regarding studies.....	20
Expenses.....	22
Degrees and Certificates	24
Prizes.....	25
Sources of Aid.....	26- 28
Physical Culture	28
Societies.....	28- 31
Gifts to the University.....	32- 35
B. AT ROLLA.....	35- 37
Buildings and Equipment.....	35- 36
Expenses, etc.....	36
DEPARTMENT STATEMENTS—	
I. ACADEMIC—Faculty	38- 40
Requirements for Admission.....	40- 43
Entrance Examinations.....	43- 44
Approval of Schools.....	45- 53
Scheme of Courses	53- 56
Courses of Study in detail.....	57- 74
English, 57; Latin, 59; Greek, 60; Classical Archæology, 61; Ro-	
mance Languages, 62; Germanic Languages, 63; History, 64; Po-	
litical Economy, 65; Philosophy, 65; Mathematics, 66; Astron-	
omy, 67; Physics, 69; Chemistry, 70; Geology, 71; Biology, 72;	
Elocution, 74.	

Contents

v

	Page
II. NORMAL—Faculty	75- 77
Elementary course.....	77
Advanced course.....	78- 79
Teachers' courses.....	79
III. LAW—Faculty	80
Admission.....	80- 83
Courses.....	83- 84
Texts.....	84
Graduate Course.....	84
Degrees and Honors.....	86- 87
Announcements.....	87- 88
IV. MEDICINE—Faculty	89
Admission.....	90
Course.....	90- 91
Course in detail.....	91- 94
Degrees, etc.	94
V. MILITARY—Announcement	95- 99
VI. COLLEGE OF AGRICULTURE AND MECHANIC ARTS ...	100- 145
Faculty	100- 103
Historical Statement	103- 104
A. School of Agriculture	105- 125
Faculty.....	105- 107
Admission.....	107
Schemes of courses.....	107- 111
Courses in detail.....	112- 125
Agriculture, 112; Horticulture, 115; Entomology, 118; Agricultural Chemistry, 119; Veterinary Science, 119; Mechanic Arts, 120; Drawing, 121; Commercial Studies, 121; Military Science, 122; English, 123; Political Economy, 123; Mathematics, 123; Physics, 124; Chemistry, 124; Botany, 125; Geology, 125; Climatology, 125.	
B. School of Mechanic Arts	126- 127
Statements	126- 127
C. School of Engineering	127- 136
Faculty.....	127- 128
Admission.....	129
Courses	129
Degrees.....	129
Courses in detail.....	130- 136
(a) Civil Engineering	130- 132
(b) Surveying.....	132
(c) Electrical Engineering.....	132- 133
(d) Mechanical Engineering.....	134- 136

	Page
D. School of Mines (at Rolla).	136- 142
Faculty.....	136- 137
Statement	137
Admission..	137
Courses	138
Degrees.....	138
Courses in detail	139- 142
(a) Mining Engineering.....	139- 140
(b) Civil Engineering.....	139- 140
(c) Chemistry and Metallurgy.	139- 140
(d) Special Courses.....	140- 141
(e) Graduate Courses	141
(f) Academic.....	141- 142
E. Experiment Station.....	142- 145
VII. GRADUATE DEPARTMENT....	146- 152
Admission (Academic Graduate Courses).....	146
Degrees (Academic).....	146- 147
Courses	147- 152
LIST OF STUDENTS AND GRADUATES.....	153- 174
I. LISTS OF STUDENTS	153- 167
Academic Department.....	153
Normal Department..	157
Law Department.....	158
Medical Department..	160
College of Agriculture and Mechanic Arts..	161
Summaries	167- 170
II. LISTS OF GRADUATES FOR 1895-6.....	171- 174
At Columbia.	171
At Rolla.....	174
APPENDIXES—	
I. Summer Schools.....	175
II. Yeater Bill.....	183
INDEX	187

Omissions and Corrections.

1. Courses in Ancient and Mediæval History will be offered by the President of the University.
2. The entrance conditions in the Normal Department (pages 75-79) are the same as in the Academic Department (pages 41-43).
3. Page 34: Gifts "to the Law Observatory" should be "to the *Laws* Observatory."

Report of the Board of Curators.

To his excellency, LON. V. STEPHENS, *Governor of Missouri*:

DEAR SIR: We have the honor to to transmit herewith the annual catalogue of the University of Missouri.

ATTENDANCE.

The enrollment of students since the issue of the catalogue for last year is as follows:

At Columbia.....	701	a gain over last year of 21
At Rolla.....	104	“ “ “ “ “ 32
Total.	805	53

There has been a small increase in the teaching force at Columbia; none at Rolla.

IMPROVEMENTS.

The most important improvement of the year has been in the laboratory facilities afforded the department of Horticulture in the completion of the Greenhouse. Few universities have opportunities for the study of Horticulture that are superior to ours; none in the Mississippi Valley except Washington University with its Shaw's Garden.

The appointment of a Professor of Elocution and of a Professor of Bacteriology and Pathology supply serious deficiencies, and will be approved by all.

PROSPECT FOR THE CURRENT BIENNIAL PERIOD.

Although it will be impossible to expand the scope of the University in any direction, all the standard courses will be maintained, and there will be no necessity for retrogression in any important respect.

SUMMER SCHOOL.

In the Summer School, Teachers' courses will be offered this year in Physics, Biology, Normal Training, and Horticulture. The attendance in this school has been greatly increased. The first summer it was 30; the second summer it was 80. This summer we hope for 150.

DIPHTHERIA ANTITOXIN.

It has been deemed expedient to abandon the production of diphtheria antitoxin. Means do not allow us to continue this valuable work.

EXAMINER OF SCHOOLS.

It is hoped that it will not be necessary to discontinue the services of the Examiner of Schools. Supt. John R. Kirk is emphatic in expressing the hope that the examiner be retained.

YEATER SCHOLARSHIPS.

It should be known in every county of the State that the Yeater Scholarship law has not only been sustained in Court, but that it has been amended in accordance with the wishes of its author. There is at present one scholarship in every County and two in the City of St. Louis. The number will be increased as the funds increase.

Henceforth the Corporation taxes collected at Jefferson City are to be distributed to all the Counties of the State in proportion to their representation in the House of Representatives, i. e., in proportion to population. This will work in favor of those Counties which otherwise would get little benefit from the law. More than half of these scholarships are still vacant. Students in every County should make inquiry at Columbia as to vacancies, and the requirements on the part of applicants.

The scholarships are for the benefit of poor young men and women who cannot command the money to meet the expense of a College Course. Persons of means, or those whose fathers have means, are not eligible, and should not apply.

A Yeater Scholarship secures free tuition and an allowance in cash, depending on the income of the State Scholarship Fund in the hands of the County Court, but not exceeding ten dollars per month for ten months in a year. The scholarships are valid in all departments of the University at Columbia and at Rolla.

The Scholarship Funds come not only from corporation taxes, but from licenses to manufacture and sell patent medicines and from collateral succession taxes. (See Appendix II.)

NEW CADET LAW.

By an amendment the number of cadetships was doubled, thereby making the total possible number 352.

The following pages give in detail the organization and work of every department. The Faculties are worthy of all confidence, and the students are assured of good treatment and good training. The University deserves well of the State, and should be a source of pride to all its people.

ENDOWMENT OF THE UNIVERSITY.

The following is an extract from the last report of the Curators to the Governor:

"A fixed proportion (one-third of the revenue) is always set aside for the benefit of the common schools; a similar arrangement can be extended

to the University. The amount proposed is a very moderate one, much less than is regularly set aside by many of the States in the Union; and the method is one that is extremely popular wherever it is tried. It removes the question of appropriations for the University from the arena of rival and opposing claims, and it insures, in the most dignified manner, an adequate income for the support of higher education. The taxable property of the State is at present about one billion dollars, consequently the annual appropriation recommended would amount at present to about \$166,666.67. This amount should include all appropriations for the School of Mines. As the wealth of the State increases, the amount set aside for the University would increase as well, and properly so, because the University must of necessity increase in size and in completeness with the growth of the State. The State of Michigan, whose educational zeal and eminence are well known, sets aside one-sixth of a mill, as is proposed above; and in addition to that it appropriates money from time to time for the erection of new buildings. Besides Missouri, there is scarcely a western State that does not provide in this way for its University. Wisconsin and Nebraska set aside a larger proportion.

"This recommendation is respectfully presented to the intelligent people of Missouri. It is perfectly evident that the University of the State will be what the State makes it. It cannot rise above the standard set by the people. If it is to be a crown of glory and a perpetual blessing, it must be nourished and strengthened and enlarged with increasing years. It must be in no sense a bone of contention or the cause of petty jealousy; its policy must be stable; its revenues must be sure, and its promises must be faithfully kept. None of these things can be if the public favor is uncertain, and if the appropriations are to be endangered by sectional or partisan jealousies. It is our earnest hope that the next General Assembly will remove the question of properly supporting the State University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is ensured through the action of a just and unfailing rule."

The following recommendations, respecting the State University, of Gov. Stone in his last message and of Gov. Stephens in his first message to the Legislature of Missouri, are in perfect accord. They should make an epoch in the history of higher education in our State, and should call forth hearty praise from every advocate of enlightened progress.

Extracts from the message of Hon. Wm. J. Stone, Governor of Missouri, to the Thirty-ninth General Assembly at Jefferson City, on Friday, January 8, 1897:

"We now have laid the foundation of a great University—but we have little more than that. If the Institution is liberally supported by the people and wisely managed by those in charge of it, we can soon build up here

in our Imperial State the greatest University in the southwestern section of the Union. I should regard that consummation as one of the proudest achievements within our reach—one that would reflect the highest honor and redound in the greatest benefits to the people. Aside from the natural and patriotic desire all of us should feel to supply our sons and daughters with the best possible educational facilities, the presence of a superb and famous University in the State would do more, perhaps, than any other one thing to lift the State into universal esteem and attract to it the favorable notice of mankind. It will not do to say that the University is not the school of the poor boy, or that it is not now what it ought to be. As a matter of fact, a majority of the University students are the sons and daughters of those denominated as the common people. But if it were true that the children of the poor do not for any reason enjoy to any large extent the advantages of the institution, then their opportunities for enjoying them should be made easier. It more often happens than otherwise that those who rise to great and deserved prominence in the State or nation, and who add the greatest luster to their country's history, have come from what are regarded as the humbler walks of life. There are hundreds of boys and girls whose possibilities of usefulness and greatness cannot be estimated, if they were only given opportunities for full development. Our common and intermediate schools are indispensable. They perform a noble work and should be supported with unstinted generosity. But those schools cannot take the place of the University. The University is the final training school where those prepared for admission to it are rounded out and specially equipped for successful labor in the fields of their choice. It should be supported in a broad and catholic spirit, provided with every needed facility, and administered along such practical lines as will strengthen and build it up, so that none desiring its advantages will be denied them. If it is not now such a school as it ought to be, we should, on that account, strive all the more to make it what we would have it. Somewhere in the Southwest and in the near future, a splendid University will rise—one that will shine resplendent above all rivals. Illinois, Iowa, Kansas, Nebraska and Texas are all fighting for this distinction. When success is once achieved it will be hard to wrest the laurel from the victor. Unquestioned supremacy once obtained is apt to be permanent. Missouri holds the key to the situation, and, if we but utilize our advantage, we can win the prize. If we are to succeed, the people must take hold of the University with a firm but affectionate hand and lift it right up beyond the reach of danger, and send it forward with that confident strength that overwhelms opposition and makes victory sure.

"The University cannot be properly, even decently, supported out of the present revenues and in accordance with the present methods of making appropriations without detriment to other important interests. The truth is, this institution ought to be taken out of the general squabble for appro-

priations which occurs at every regular session of the General Assembly, and be provided with a permanent and sufficient income of its own. The sum which can now be set apart out of the general revenue for the University is grossly and shamefully inadequate to answer its just demands. It ought to be sustained from a permanent fund. It should not only be spared the humiliation of becoming a biennial mendicant, but it should be placed in a position of absolute independence. Many of the States now levy a special tax or set apart by law a certain per cent. of their aggregate revenues for their Universities, varying in amount from one-fifth to one-twelfth of one mill per annum on every dollar of assessments or collections. This is done in Ohio, Indiana, Illinois, Wisconsin, Minnesota, Michigan, Kansas, Nebraska, California, and perhaps other States. In Missouri the University gets what it can out of what some have not inaptly designated as 'the general scramble.' Why should not our University be treated with as much consideration as are those of other States? Not long since the Hon. John R. Kirk, Superintendent of Public Instruction, recommended that the General Assembly should set apart for the benefit of the University an equivalent of one-sixth of a mill per annum upon every dollar of the assessed value of the taxable property of the State; and in support of his recommendation he expressed the hope that if that policy should be adopted it would 'remove the question of properly supporting the University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is secured through the action of a just and unfailing rule.' If that recommendation should be agreed to, it would result in creating an annual revenue of about \$165,000, based on present valuations. The sum realized from such a tax would, of course, increase from year to year with the increase of valuations; but that would be as it should, for the necessities of the institution would increase with the growth of the State. In the general spirit and object of this recommendation, and in its wisdom as a policy, I most heartily concur; but whether it could be entered upon at this time, without making provision for additional sources of revenue, is questionable, because of the amount it would absorb out of the aggregate. However, the suggestion is one that can be made practicable by enlarging the revenues, and I earnestly invoke your attention to it with the hope that it may be regarded with favor."

Extracts from the Inaugural Address of Hon. Lon V. Stephens, Governor of Missouri, delivered before the Thirty-ninth General Assembly, at Jefferson City, January 11, 1897:

"No interest in Missouri should be more carefully guarded or more vigorously promoted than her public school system. Her schools should all be encouraged by wise legislation and supported, as they have always been, by ample appropriations. The State University, which is the cap sheaf of our public school system, is entitled to, and will, doubtless, receive at your

hands that consideration which it has always received, and which will enable it to take front rank among the institutions of America. If the necessity ever existed for a Missouri youth to leave his own State for education, it should be removed by such judicious fostering of our own institution as will not only keep our boys and girls at home, but will draw to Missouri the ambitious of other states. I have conferred with Governor Stone, and I have read that portion of his message concerning the endowment fund for the University. I approve of the suggestions he makes to you on this subject."

In a Special Message sent in February, 1897, to the 39th General Assembly earnestly advocating the endowment of the University His Excellency, Governor Stephens, says:

"Under its present conditions the revenue of the University from endowments from the United States Treasury (known as the 'Morrill Fund') and from fees and rents, amounts to about \$102,000 per year. The current expenses of maintenance, including the proper and inevitable growth of libraries and laboratories, and a reasonable margin for putting up special buildings, as outlined in the biennial report just issued, exceeds this amount by at least \$100,000."*

"As the fifth state in the Union, Missouri cannot afford to take a step backward, nor are we willing to stand still in this fight for the higher education of our children when the states adjoining us are doing as much for theirs."

Finally if our University is to keep pace with other State Universities, and if Missouri means to offer her children on her own soil as good education as is offered by other States, she must give her University in some form adequate permanent endowment for maintenance and support and must provide buildings and equipment with greater liberality than has been shown in the immediate past. Our University cannot hold its own in the race for pre-eminence when other States are much more liberal in their appropriations. The accuracy of the figures given below can be easily verified. For the biennial period ending December 31, 1896, the income for two years of the following State Universities was as follows: Michigan \$800,000; Wisconsin \$770,000; Minnesota \$700,000; California \$660,000; Illinois \$550,000; Ohio \$504,000; Pennsylvania (estimated) \$1,000,000. All these are State Universities. Some three years ago a bill was introduced into the Legislature of Michigan increasing more than three times the annual tax for the maintenance and support of the University. Not more than three votes in House and Senate combined were cast against the measure. About a year ago the Ohio Legislature voted by a large majority to double the annual tax for the maintenance and support of her University. Last winter

*An attentive reading of this paragraph shows that the Governor means \$100,000 a year, or \$200,000 for each biennial period.

the Legislature of California passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, which had, in addition to said tax, an interest-bearing endowment of more than four millions of dollars, and had recently received from private individuals promises of more than four millions of dollars for new buildings. Therefore, although the University had four millions of dollars in interest bearing funds, and had received offers of four millions of dollars from private individuals for new buildings, and was receiving from the state for current expenses \$200,000 for each biennial period, the Legislature, in the midst of hard times, passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, so that it should yield thenceforth for each biennial period \$400,000. The assessed valuation of property in Missouri is almost exactly what it is in California. It is not our business in the annual catalogue to advertise the glories of other states and other Universities, but it is our duty to tell our own people plainly, that if better provision is not made for their University, it will become a by-word and a reproach when compared with those of other states, and that the youth of our State must receive at home inferior educational advantages or must go over the borders of this commonwealth to Universities that are liberally supported by other states. Kansas, Wisconsin and Illinois are very close, and Lincoln, Nebraska (the seat of the University), is within two hours' ride of northwestern border of Missouri.

WM. M. EADS,

B. R. CAUTHORN,

Executive Board of Curators.

COLUMBIA, MO., April 28th, 1897.

The Board of Curators and the Faculty reserve the right to withdraw, without further notice, any course of instruction offered in this catalogue, if circumstances should render such withdrawal necessary.

CORPORATION.

THE BOARD OF CURATORS.

†NAT. M. SHELTON.....	Lancaster	} Term expired Jan. 1, 1897
†WM. M. EADS.....	Carrollton.....	
R. B. OLIVER.....	Jackson	} Term expires Jan. 1, 1899
G. B. ROLLINS.....	Columbia	
JAS. T. MOORE.....	Lebanon.....	
GARDNER LATHROP	Kansas City.....	} Term expires Jan. 1, 1901
B. R. CAUTHORN.....	Mexico.....	
M. E. BENTON.....	Neosho	
JOHN D. VINCIL.....	St. Louis.....	Term expires Jan. 1, 1903

OFFICERS OF THE BOARD.

.....	President
NAT. M. SHELTON.....	Vice-President
J. G. BABB,	R. B. PRICE,
Secretary.	Treasurer.

THE EXECUTIVE BOARD AT COLUMBIA.

B. R. CAUTHORN.....	Mexico
WM. M. EADS	Carrollton

THE EXECUTIVE COMMITTEE OF THE SCHOOL OF MINES.

R. B. OLIVER, Chairman.....	Jackson
M. E. BENTON.....	Neosho
JAS. T. MOORE	Lebanon
M. F. FAULKNER,	D. W. MALCOLM,
Secretary.	Treasurer (office at Rolla).

THE BOARD OF VISITORS.

CHARLES E. YEATER.....	Sedalia
C. B. CORUM.....	Boonville
WALLACE ESTILL.....	Estill, Howard county
J. N. BALLARD.....	Montrose
W. C. ALLDREDGE.....	California

†Successors not yet appointed.

Faculty of the University.

Names are printed in order of appointment, except that of the President.
Those marked with a star [*] are names of members of the Faculty of
the School of Mines and Metallurgy, at Rolla, Missouri.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Medieval History.

PAUL SCHWEITZER, Ph. D.,

Professor of Agricultural Chemistry.

ANDREW WALKER MCALESTER, A. M., M. D.,

Professor of Surgery and Diseases of Women and Children.

WOODSON MOSS, M. D.,

Professor of Anatomy and Practice of Medicine.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,

*Professor of Latin Language and Literature, and Dean of the Academic
Department.*

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

*Emeritus Professor of Geology and Mineralogy, and Curator of Geological
Museum.*

JAMES AULL YANTIS, LL. B.,

Professor of Law.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

***WALTER B. RICHARDS, M. A.,**

Director of School of Mines and Metallurgy, and Professor of Mathematics.

ALEXANDER MARTIN, A. M., LL. D.,

Professor of Law, and Dean of the Law Faculty.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDERGRAFF, M. S., B. C. E.,

Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

JOSEPH PHILIP BLANTON, A. M.,

Professor of Theory and Practice of Teaching.

†JOHN MILLER BURNAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

CHRISTIAN WILLIAM MARX, B. E.,

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology (Human and Comparative).

*ELMO GOLIGHTLY HARRIS, C. E.,

Professor of Civil Engineering.

JOHN DAVISON LAWSON, B. C. L., LL. D.,

Professor of Law.

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,

Professor of Classical Archæology, Assistant Professor of Greek, and Curator of Museum of Classical Archæology.

FRANK THILLY, B. A., Ph. D.,

Professor of Philosophy.

HARRY THOMAS CORY, M. M. E., M. C. E.,

Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,

Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

JOHN CHARLES WHITTEN, B. S.,

Professor of Horticulture.

†Absent for session of 1896-7.

•COURTNEY DEKALB,

Professor of Mining and Metallurgy.

•ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,

Professor of Physics.

SINDEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

HENRY JACKSON WATERS, B. A. S.,

Dean of the College of Agriculture and Mechanic Arts, and Director of the Experiment Station.

ISIDOR LOEB, M. S., LL. B., Ph. D.,

Acting Professor of History and Political Economy.

BENJAMIN FRANKLIN HOFFMAN, M. L.,

Professor of Germanic Languages.

FREDERICK BLAKMAR MUMFORD, M. S.,

Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,

Professor of Entomology, and Entomologist to the Experiment Station.

GEORGE WASHINGTON CUTLER, M. D.,

Professor of Physical Culture, and Director of the Gymnasium.

•EUGENE THOMAS ALLEN, A. B., Ph. D.,

Professor of Chemistry.

RAYMOND WEEKS, A. M.,

Professor of Romance Languages.

MATTHEW B. HAMMOND, Ph. B., M. L.,

Acting Assistant Professor of Political Economy.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,

Professor of Elocution.

HOWARD BURTON SHAW, B. C. E., A. M.,

Assistant Professor of Electrical Engineering.

WILLIAM VAN ALLEN CATRON, A. M.,

Acting Assistant Professor of Latin Language and Literature.

B. MEADE BOLTON, M. D.,

Professor of Bacteriology and Pathology.

•PAUL JULIUS WILKINS, B. S.,

Instructor in Academic Department, and Librarian.

•SILAS DINSMOOR, A. B.,

Instructor in Chemistry.

•THOMAS LEWIS RUBEN, A. M.,

Instructor in Academic Department, and Secretary to the Faculty.

ARTHUR HARRINGTON PLACE, C. E.,

Instructor in Drawing.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Instructor in Geology and Mineralogy.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

•GEORGE EDWARD MILLER, B. S.,

Instructor in Shop-work and Drawing.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

CHARLES HENRY THOMPSON, B. S.,

Instructor in Botany.

MARION WEST,

Instructor in Physical Culture.

•PAUL ARMSTRONG LARSH,

Assistant in Chemical Laboratory.

EDGAR E. BRANDON, A. B.,

Teaching Fellow in Romance Languages.

FRANCIS POTTER DANIELLS, A. B.,

Teaching Fellow in Latin.

INEZ RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

EDWARD BEAUFORD CAUTHORN, B. S.,
Teaching Fellow in Mathematics.

SUMMARY.

Professors (including President and Deans) in actual service.....	38
Assistant Professors.....	10
Instructors.....	11
Teaching Fellows	4
Laboratory Assistant.....	1
	<hr/>
	64
Counted twice.....	2
	<hr/>
Total.....	62

OTHER OFFICERS.

J. G. BABB, A. M., LL. B.,
Proctor.

R. B. PRICE,
Treasurer.

IRVING SWITZLER,
Registrar, Secretary to the Council and the various Faculties, and to the Experiment Station.

J. M. WHITE, A. B.,
Examiner of Schools.

MISS MARION WEST,
Acting Matron.

MISS MARY IGLEHART,
Stenographer.

JOHN WATSON MONSER,
Librarian.

GEN. J. B. DOUGLASS,
Superintendent Unsold College Lands.

For officers and staff of Experiment Station, see Index.

PREACHERS TO THE UNIVERSITY.

Rev. W. T. Moore, D.D., Columbia..... { September 14-19, 1896.
April 19-26, 1897.

Rev. H. M. Wharton, D.D., Baltimore.....Sept. 28-Oct. 3, 1896.

Rev. Wm. Frost Bishop, Ph.D., Liberty.....January 5-11, 1897.

Bishop E. R. Hendrix, D. D., Kansas City.....February 14, 1897.

The pastors of churches in Columbia at various times.

College of Agriculture and Mechanic Arts:

Hon. N. F. Murray, of Oregon, Mo., Vice President State Horticultural Society, "The Production of Nursery Stock." Twenty-four lectures and 12 laboratory exercises.

Hon. L. A. Goodman, of Westport, Mo., Secretary State Horticultural Society, "Commercial Orchardling and Small Fruit Growing." Twenty-four lectures and 12 laboratory exercises.

Frank Ambs, Esq., of St. Louis, Mo., "Market Gardening and Hot-bed Forcing." Twenty-four lectures and twelve laboratory exercises.

Mr. E. W. Major, of St. Anthony Park, Minn., "Practical Dairy Management." Twenty lectures and 18 laboratory exercises in butter and cheese making.

Hon. John Patterson, of Kirksville, Mo., President State Dairymen's Association, "Dairying in Missouri." Six lectures.

Dr. T. E. White, of Columbia, Mo., State Veterinarian, "The Spread of Contagious Diseases and the State Quarantine Regulations." Twenty lectures.

A. E. Hackett, Esq., of Columbia, Mo., Assistant Director Missouri Climate and Crop Service, "Climatology." Twenty lectures.

GENERAL INFORMATION.

Historical Statement:

The University was located at Columbia, Boone county, June 24, 1839. The cornerstone of the Main building was laid July 4, 1840, and this is generally accepted as the date of the *foundation* of the University. Courses of instruction in Academic work were begun on April 14, 1841. A Normal department was established in 1867. The College of Agriculture and Mechanic Arts and the School of Mines and Metallurgy were made departments of the University in 1870—the School of Mines and Metallurgy being located at Rolla. The Law department was opened in 1872; the Medical department in 1873; and the Engineering department in 1877. The Experiment station was established, under act of Congress, in 1888. The Missouri State Military School was created a department of the University in 1890. In 1868 the State gave aid for the first time to the University—a sum of \$10,000. On January 9, 1892, the main building of the University at Columbia was destroyed by fire. In the following March the Legislature gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000, and by \$25,000 additional for a new building at Rolla.

For a more detailed statement about the College of Agriculture and Mechanic Arts, see Index.

A. THE DEPARTMENTS AT COLUMBIA.

Organization and Government:

The University Council consists of the President, the Deans, Professors, and Assistant Professors, in all the Departments of the University. It is the highest organized body of the Faculty. Each Department of the University has its special Faculty, consisting of the Professors and other Teachers who give instruction in it.

The President is the executive head of the University, and is a member of all the Faculties.

Buildings and Equipments:

Location.—The University of the State of Missouri is located near the center of the State, in Columbia, a town of about 5,000 inhabitants, situated half way between St. Louis and Kansas City. The surrounding country is elevated, well drained and diversified. It is a limestone region, remarkable for its healthfulness. The University Campus includes 32 acres of un-

dulating ground in the southern part of the town. The experiment farm lies one square south of the Campus, and comprises 768 acres. The Horticultural grounds (a part of the farm) are one square from the Campus, and include about 30 acres.

Buildings.—The University has the following buildings:

The Observatory, Medical building, four Club-houses, Agricultural Farm buildings, Experiment station, Greenhouse (new), Law building (new), Chemical laboratory (new), President's house (1867), Museum (new), Agricultural College (1871), Engineering (new), Mechanic Arts (new), Power-house (new), Academic Hall (new).

We give a brief description of our *new* buildings:

The Law building, 68×114 feet, contains two stories and a basement. Its library rooms are large and well lighted.

The Chemical laboratory, 132×90 feet, is equipped with a system of exhaust ventilation capable of effecting a change of air every ten minutes.

The museum, 140×100 feet, contains in the center the Museum proper, 87×100 feet, two stories high, and entirely fire-proof. On the right is the department of Geology and Mineralogy, and on the left that of Botany and Zoology. These wings have six and eight rooms respectively, one of which is a large lecture hall, 28×40 feet.

The Engineering building, 145×78 feet, is arranged for Physics, and for Civil, Mechanical, and Electrical Engineering. It has 32 rooms, in addition to two lecture halls, 28×40 feet.

The Mechanic Arts building, 108×117 feet, has six shop-rooms, 40×40 feet; an exhibit hall, 25×40 feet; two offices, 16×18; one drawing room, 40×40; store-rooms, an engine-room, etc. The machinery is driven by a 60-horse power Corliss engine supplied with steam from the Power-house. The building is lighted from a dynamo in the basement, and is thoroughly ventilated by a fan.

The Power-house, 72×86 feet, contains a plant of five boilers aggregating 600-horse power. From this plant all the buildings are heated by a system of brick tunnels six and a half feet high by four broad. Through these tunnels are carried steam and water pipes and electric light wires.

The new Horticultural Laboratory consists of a central building 30×30 feet and two wings, each 22×30 feet. It is heated by steam, and is so arranged that each compartment maintains a different temperature. Thus it is possible to grow plants that require various degrees of heat. The boiler-house is a separate building, of such size and arrangement that additional steam may be put in for heating three or four times the present area under glass. The entire laboratory is constructed after approved modern methods. It has stone foundation below ground, pressed brick walls to a height of three feet, T iron frame filled in with white pine, grooved sash bars, and best American A glass. The glass walls of the main portion rise eight feet above the brick, and the roof slopes upward to twenty-seven feet

above the ground floor in the center, giving room for tall tropical plants. The walks between the benches are of granitoid.

The new Academic Hall, 319 feet long, with a chapel in one wing and a library in the other, contains three stories, besides a basement seven feet above ground. It is provided with appliances for direct and indirect heating, with fans for ventilation, and with thermostats for the regulation of temperature. The auditorium, 74×113 feet, seats comfortably 1,500 people. The apartments (six in number) for the exclusive use of young women contain everything conducive to study, comfort, and indoor exercise.

A new club-house for students will be built in the summer of 1897. In heat, light, ventilation, steadiness of temperature, convenience, and comfort it will be made a model dormitory.

The principal buildings of the University are grouped around a quadrangle near the center of the Campus. The quadrangle is open toward the north, with department buildings on the sides, and the large Academic Hall closing the south end. The buildings are substantially built of red pressed brick, with stone trimmings. They have division walls of brick, roofs of slate, ceilings of cement laid on steel laths, and floors of tile or of polished maple. They are heated by steam, lighted by gas and electricity, and are all supplied with water by the city water-works. The University has built at its own expense an admirable system of sewers.

Libraries.—The General University Library consists of about 23,139 bound volumes, carefully selected, and 31,860 unbound pamphlets and reports. The best literary and scientific periodicals are taken, and a large number are given yearly (see Index, under "Gifts to the University"). The Law Library, of about 4,000 volumes, is in the Law building. The Medical Library receives regularly a number of medical periodicals. Moreover, each Chair has its special technical library.

Laboratories and Museums.—Facilities for practical instruction in the sciences are provided in the museums of Zoology, Geology, and Agriculture, and in various laboratories. The University has now in regular use twenty laboratories of science and technology, and four drawing-rooms, one general and three special. The laboratories are as follows:

CHEMISTRY: Four Laboratories—General Chemistry (1st year), Qualitative Analysis, Quantitative Analysis, Agricultural Chemistry and Experiment Station work.

PHYSICS: Three Laboratories—For work of different grades, besides small rooms for special work.

MINERALOGY AND GEOLOGY: Two Laboratories.

ASTRONOMY: A well equipped Observatory for practical instruction and observation on the part of the students. See Index, under "Observatory."

BIOLOGY: Two Laboratories—One for General Biology, and one for advanced work of various grades.

ENTOMOLOGY: One Laboratory.

PHYSIOLOGY: One Laboratory.

ANATOMY: One Laboratory.

BACTERIOLOGY: One Laboratory.

HORTICULTURE: One Laboratory.

ENGINEERING: Three Laboratories—For Civil, Electrical, and Mechanical Engineering, besides smaller rooms for special work.

SHOPS: Four—One for bench work in wood, a forge room, a wood lathe room, and a machine shop. See Index.

DRAWING ROOMS: One for general drawing, and three for special drawing in Civil, Electrical, and Mechanical Engineering, respectively.

Each of the Laboratories mentioned above occupies at least one room, and in some cases more.

Experiment Station.—The Agricultural Experiment Station is on the Horticultural grounds. Bulletins giving the results of experiments are issued at intervals. The Station is provided with an outfit of meteorological instruments, and daily observations are made by an officer of the U. S. Weather Bureau. See Index, "Experiment Station."

Club-houses.—The University has four club-houses which furnish about 210 young men with rooms and board. Two of these are substantial brick buildings on the Campus, affording accommodations for about 165 students. The other club-houses are wooden buildings, and have rooms for 45 students.

The 39th General Assembly appropriated \$33,000 for the construction of an additional club-house, included in those mentioned above. This building will accommodate about 75 lodgers, and will be completed about October 15, 1897.

For information about the equipment of the School of Mines and Metallurgy at Rolla, see Index.

Lectures and Recitations:

Lectures and recitations in all departments, except that of Law, are held on six days in the week. By the new schedule of hours the student's work has not been increased, but has been more evenly distributed.

Religious Exercises:

Religious exercises are held every morning in the University Chapel. They consist of a hymn by the choir, readings from the Old and New Testaments, a brief prayer, and a closing hymn by the congregation.

These exercises are made as attractive and beneficial as possible. During the present session, distinguished members of various churches have been invited to conduct them for one week, and to preach to the students and Faculty at some convenient time. A list of the ministers from a distance who have rendered this service during 1896-7 is given on page 14.

In Columbia there are churches of nearly all the prominent denominations. The University advises its students to attend regularly the services at the churches of their parents. The students maintain an efficient chapter of the Young Men's Christian Association, and one also of the Young Women's Christian Association. (See "Societies" below.) The University has much of moral and religious influence, but is non-sectarian.

Provisions for Young Women :

All departments of the University are open to women. In the lecture-rooms they receive the same instruction and meet the same intellectual requirements as the young men. There are special rooms—six in number—furnished with admirable equipment for health and comfort, and presided over by a matron, who has charge of all the young ladies in attendance. One of these rooms is fitted up as a gymnasium, containing all the appliances necessary for physical culture. During lecture hours the young ladies, when not attending lectures, are expected to be in their waiting-rooms, or in the University library, or at their respective homes.

The University has no boarding department; but many of the families of Columbia take boarders, and students find no trouble in securing, at reasonable rates, the comforts and refinements of home life.

For information about the Young Women's Christian Association and the Philalethian Literary Society, which are composed of students of the University, see "Societies" below.

University Extension :

1. A Summer School of Science, intended especially for teachers, will be conducted during the summer of 1897. For particulars see Appendix I.

2. Twelve weeks' courses in Agriculture and Horticulture, intended for farmers, were given in the winter of 1897, and will be given again during the winter of 1898. See Index, under "Short Winter Courses."

3. Special courses primarily for district school teachers are given in April and May of each year. See Index, "Teachers' Courses."

STUDENTS.**Discipline :**

In the government of the University, the President and the Faculty rely chiefly upon the sense of duty of the student corps. The student is expected to pursue his studies with diligence, to attend classes regularly, and to live in the exercise of morality and good behavior. The removal of those who fail to meet these requirements is demanded in the interest of the University and the better class of students. Students are under the direct supervision of the University only when on the campus, but they are responsible for their conduct wherever they may be.

Directions for New Students :

1. New students will first present themselves for examination. This should be done *before paying tuition fees*. For dates of examinations, see the Calendar, page iii.
2. After passing the entrance examinations, the students must pay to the Treasurer the amount required. See "Expenses," page 22.
3. The Treasurer's receipt should be at once presented to the Proctor, who will enroll the student's name and give to him his class-card, with instructions how to have it filled.
4. If assistance is needed in obtaining board, application should be made to the Proctor.

STUDIES.**Regulations in Regard to Studies:**

No student in any department of the University may have more than 18 hours a week in the lecture room, unless the course prescribed for the year requires a greater number of hours and he is following that course exactly.

Academic students are expected to spend not less than 15 nor more than 18 hours a week at lectures or recitations.

One hour in the lecture-room is considered equal to two and one-half in the laboratory, the drawing-room, the shop, and the commercial-room.

Class-cards must be properly filled, countersigned, and deposited with the Registrar, within three days after they have been issued. In all departments cards are signed by the Dean first and then by the President.

Students that enter the University in the first semester and wish to make any change in their class-cards for the second semester, are required to take out their cards again in the last week of the first semester, and to return them to the Registrar duly filled and approved on or before Tuesday, the first day of the second semester. Students that fail to comply with this requirement must pay a second entrance fee of \$10, unless specially excused. Excuses will not be granted except for grave reasons.

Studies in Other Departments :

Students registered in one department may take work in other departments for which in the judgment of the Professors concerned they are prepared; but only with the consent of the Dean or the Advisers of the department in which the student is registered. Students taking work in another department than that in which they are registered are subject as respects this work to the rules of the department in which the work belongs.

1. Academic students may take Anatomy or Physiology, or both, in the first year of the Medical Course, or Bacteriology in the second year; Drawing, Book-keeping, Shop Work, and any other work not below the Freshman (Academic) grade, in the College of Agriculture and Mechanic Arts; and any instruction offered in the Normal department. None of this instruction,

however, shall count toward any Academic degree unless it is allowed in the regulations respecting studies for such degree.

2. Law students may take any instruction offered in other Departments of the University, but it shall not count toward any degree in Law.

3. Medical students in their first year may take any work offered in the Academic department, and the College of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but such work shall not count toward the degree of M. D., unless it is included in the regular Medical course.

4. Students in the College of Agriculture and Mechanic Arts may elect in the Junior years the courses in Physiology and Hygiene from the first year of the Medical course, and from the Academic or Normal department any subject for which they are prepared, and which is germane to the work of the College. Electives taken as indicated count toward the degree of B. Agr.

5. Engineering students may take in their Freshman and Sophomore years any instructions offered in the Academic department, the Normal department, in the College of Agriculture and Mechanic Arts, or Anatomy and Physiology in the First year of the Medical Course; and in their Junior and Senior years they may take anything offered in the University; but such instruction shall not count toward a degree in Engineering.

6. No work shall count toward the Normal diploma, except so far as it may conform to the requirements specified in the announcement of the Normal Department.

7. Instruction in Military Science and Tactics is open to students in all departments.

Graduate Studies :

A number of graduate courses are offered. For details see announcement of Graduate Department.

Examinations and Class Honors :

1. Examinations at the end of each semester close the studies pursued to that point. Re-examinations for change of grades are not allowed.

2. The honor of valedictorian is awarded in the various departments to that student who has the highest grade.

3. All special examinations, except for change of grades, and the acceptance of grades from other institutions, are in the discretion of the professors.

Reports :

From all departments, except those of Law and Medicine, reports of students are sent, at the close of each semester, to the parents or guardians, showing their standing in the subjects that they are pursuing.

EXPENSES.**Fees and Deposits:**

Academic students and those in the School of Agriculture pay an entrance fee of \$10, and library and incidental fees amounting to \$10.

Law students (regular or special) pay \$50 a year. Students entering the Junior class late will not be entitled to any reduction in the amount of the fee, except as stated below. Books cost about \$35 a year.

The Medical student pays \$20 for the first year; for the second year, \$50; for the third year, \$50.

The Engineering student pays \$20 for the Freshman, and the same for the Sophomore year; for the Junior and Senior years he pays \$50 each. If he takes one professional study or two studies of any kind from the Junior or Senior year, he must pay \$50.

State Cadets in the Academic Department or in the College of Agriculture and Mechanic Arts, including the School of Engineering, pay neither entrance nor library and incidental fees; but if they take laboratory work they must make the required deposits. In all other departments of the University they pay the regular fees. If they take any study in Law or Medicine whatsoever, they must pay the full fees of that department.

Graduate students in any department of the University pay fees amounting to \$10 a year, and the usual laboratory deposits if they take laboratory work. If they take undergraduate work in any department, they must pay the full fees in that department. Graduates of colleges and other universities will not be classed as graduate students if they take undergraduate work.

Students in any department that withdraw before the opening of the second semester, will, upon application, have refunded to them in the early days of March, one-fourth ($\frac{1}{4}$) of the fees for the whole session; but such students must, before the close of the first semester, file with the President written application addressed to the Board of Curators for the refunding of that part of the fees. Students that enter during the second semester will pay three-fourths ($\frac{3}{4}$) of the fees for the entire session.

In all the laboratories, except the chemical, and in certain departments of the shop, a deposit of \$5 for a session, or any part thereof, is required. Hereafter this deposit will be required in the Laboratory of Anatomy also. This deposit, less deduction for loss arising from cost of material or from injury, is returned at the end of the laboratory course in any session. In the Chemical Laboratory the deposit is \$9. Only Teaching Fellows are exempt from making these deposits.

The charge for a diploma is \$3 and for a certificate \$2.

Laboratory deposits and rent of rooms in the Club-houses must be paid to the Proctor; all other fees must be paid at the Boone County National Bank, to the Treasurer of the University. *All fees and deposits must be paid in advance.*

The student who has attained the highest rank in the graduating class of any "approved school" will be permitted to enter the Academic department of the University, or the College of Agriculture and Mechanic Arts (including Engineering) without the payment of the entrance and the library and incidental fees for the first year.

Students who fail to comply with the regulation requiring class-cards in the second semester to be filled, approved and filed with the Registrar by or before Tuesday, the first day of the semester, must pay a second entrance-fee of \$10, unless specially excused. Excuses will not be granted except for grave reasons.

For statement of expenses in the School of Mines and Metallurgy (at Rolla, Missouri), see page 36.

Board:

Board in private families, with lodging, fuel and light, may be obtained for from \$3 to \$4.50 a week.

The Club-houses accommodate about 210 students. In the large brick club building situated on the Campus—known as the University Boarding Club—room-rent for each student is from \$20 to \$25 a year, according to location of the room. This includes room-rent, the attention of servants, heat, water, and the aid of a matron, who supervises the house-keeping. It is payable on or before the first day of September. The cost of board, room-rent, fuel, lights and washing, to those who enter a club, is about \$2 a week. Each room is furnished with a double bed-stead, a stove, a table and two chairs. The occupants are expected to furnish whatever else they deem necessary. The University Club-house is furnished with a good system of steam heating and ventilation, and with new closets and bath-rooms of the best quality. The rooms are lighted with electric lights.

The members of the club have their own officers—president, commissary, secretary, censors, etc. They levy and collect assessments, buy their own provisions, and thus regulate their own expenses. The matron supervises the preparation and serving of the food and the cleaning of the building.

Students in the College of Agriculture and Mechanic Arts will have the preference of rooms in the Agricultural club-houses, provided application be made before the opening of the first semester, in September; but they will pay the same rent as other students. These two buildings accommodate 32 men. The rent of these rooms is from \$10 to \$12.50 a session.

In any club building, only two students will be allowed in one room, except by consent specially given by the Executive Board; and when three thus occupy one room, each of the three must pay full room-rent.

Except by consent of the Executive Board, specially given, students that do not rent rooms in a club will not be permitted to take their meals at the club table. On no account will table board in a club be given to any person not duly matriculated in the University.

As the accommodations of the club-houses are limited, it is necessary for students who wish to engage rooms to make early application for them; they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for them must be made to the Proctor of the University.

The new club-house, for which the Thirty-ninth General Assembly appropriated \$33,000, will be ready for occupancy about October 15, 1897. It will accommodate about 75 students. The prices of rooms have not yet been determined.

DEGREE AND CERTIFICATES.

Degrees Conferred:

The following degrees are now conferred by the University:

In the Academic department, Bachelor of Arts (A. B.), Bachelor of Letters (B. L.), Bachelor of Science (B. S.).

In the Normal department, Bachelor of Pedagogics (B. P.).

In the School of Agriculture, Bachelor of Agriculture (B. Agr.), and Master of Agriculture (M. Agr.).

In the Law department, Bachelor of Laws (LL. B.), and Master of Laws (LL. M.).

In the Medical department, Doctor of Medicine (M. D.).

In the School of Engineering, Bachelor of Science (B. S.) in Civil Engineering, in Electrical Engineering, and in Mechanical Engineering, respectively. The degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), are also given for graduate work.

The degrees of B. S. in Mining Engineering, in Civil Engineering, and in Chemistry and Metallurgy, and the graduate degrees of Civil Engineer (C. E.), and Engineer of Mines (E. M.), are given in the School of Mines and Metallurgy, at Rolla, Missouri.

In addition to the above, the usual Master's degrees and the degree of Doctor of Philosophy (Ph. D.), are conferred upon the completion of sufficient graduate work. For particulars, see announcement of the "Graduate Department."

Except that of Doctor of Laws (LL. D.), no degrees are conferred *honoris causa*.

For further information, see the respective departments.

Certificates:

A certificate in surveying, one in Pedagogics, one in the two-years' course in Agriculture, and also one in Military Science and Tactics, are given.

Three certificates (in Assaying, Surveying, and Electricity) are given at the School of Mines and Metallurgy, Rolla.

For further information, see these departments.

COMMENCEMENT EXERCISES.

The Commencement Exercises occupy the four days ending with the first Wednesday in June of each year. For specific days, see Calendar, page iii.

PRIZES.

Curators' Scholarships :

By order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College (including Engineering) without the payment of the first year's entrance and library and incidental fees.

The student attaining the highest grade, or who shall be first in merit, in taking the degree of A. B., B. S., or B. L., in the graduating class of any of the universities or colleges composing the Missouri College Union, will be admitted to the Law or to the Medical department of the University for the first year without payment of any tuition fees. The Missouri College Union is now composed of Washington University, Westminster College, William Jewell College, Drury College, Central College, Missouri Valley College, and the University of the State of Missouri.

Students who hold Teaching Fellowships (see page 27) are admitted to the University without the payment of entrance and library fees, or laboratory deposits.

Stephens Medal :

Founded by the Hon. James L. Stephens, of Columbia, and annually awarded for the best oration by a member of the Senior class. The prize consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

The Laws Astronomical Medal :

For conditions of award, see Index, under "Astronomy."

Dachsel Prize :

Ten dollars in money, by the late Charles Dachsel, engineer, of Jefferson City, Mo., is awarded for the best thesis on the steam engine.

McAnally Medal :

For the best English essay. See Index, under "English."

Rollins Scholarships :

See page 26.

Law Prize :

See announcement of Law Department.

Medals Offered by the Literary Societies :

The literary societies in the University offer medals to the winners in their inter-society contests in declamation, essay, oration, etc.

SOURCES OF AID TO STUDENTS.**1. The Rollins Aid Fund :**

Anthony W. Rollins, M. D., an honored citizen of Boone county, father of the Hon. James S. Rollins, dying in 1845, left by his will the sum of \$10,000 in trust for the purpose of educating such poor and indigent youths of Boone county, both male and female, as might be unable to educate themselves. Three-fourths of the annual interest on the fund, according to the directions of the donor, is to be devoted to the education of the youths of Boone county, and the remaining one-fourth is to be added to the interest-bearing principal. The fund amounts now to about \$40,000. The President of the University is required, at each annual Commencement, to invite the citizens, who may be present, to subscribe for the enlargement of this fund. The beneficiaries of this charity are annually selected by the President of the University from the indigent youths of Boone county, male and female. In compliance with the wishes of the donor, the selection is made with reference to the moral as well as the intellectual qualities of the youths inclined to avail themselves of the advantages of the fund, preference being given, in the selection of boys, to such as evince an inclination to preach the gospel.

Applications for aid from the Rollins Aid fund must hereafter be in writing; a blank form will be furnished by the Proctor, with whom it must be filed after it has been filled. The applicant must appear in person at the opening of the first semester, September 14, as no reservation will be made. No application should be made or will be received, unless the applicant has passed the examinations for entrance and has been duly admitted to the University. Hereafter a part of the money given to each beneficiary may be paid at the opening of the first semester and a part at the opening of the second semester.

2. The James S. Rollins University Scholarships :

In 1889 the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri, for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"*First*—The College of Arts, for the degree of A. B., fifty dollars.

"*Second*—The College of Arts, for the degree of B. S., fifty dollars.

"Third—The College of Agriculture and Mechanic Arts, for the degree of B. Agr., fifty dollars.

"Fourth—The College of Law, for the degree of LL. B., fifty dollars.

"Fifth—The College of Medicine, for the degree of M. D., fifty dollars.

"Sixth—The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the *Junior class*, in each of the colleges designated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In according these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

"With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted.

I am, very respectfully,

(Signed)

JAMES S. ROLLINS."

3. Cadetships:

Each Senator and Representative of the General Assembly of Missouri may appoint two cadets from his district. For further information see report of the Department of Military Science and Tactics.

4. Yeater Scholarships:

Under the provisions of the Yeater act passed by the 38th General Assembly of Missouri, one or more scholarships are to be established in every county whenever funds, under that act, accumulate. See Appendix II.

5. Curators' Scholarships:

See page 25.

6. Teaching Fellowships:

Teaching Fellowships are annually established in any subject where such additional teaching force may be required. Students holding these are put down in the list of the Faculty as Teaching Fellows. They are appointed by the Board of Curators, are required to teach five or six hours a week, and receive for this service \$200. They are required to devote the rest of the time to graduate work approved by the Professor whom they assist and by the President of the University. Only those who have com-

pleted the longest undergraduate course given in the University in any subject are eligible to the fellowships in that subject, and they must be recommended to the Board of Curators by the Professor of said subject. Students holding these fellowships are not required to pay entrance and library fees, nor to make laboratory deposits.

7. Club-houses:

See page 23.

8. Labor on Farm and Garden:

PHYSICAL CULTURE.

Gymnasium:

The Thirty-eighth General Assembly appropriated the sum of \$7,500 for the equipment of a gymnasium, and \$1,300 for the improvement of the athletic grounds. Rooms in the new Academic Hall have been set aside for the gymnasium proper, and fitted with baths, lockers, etc. A fine equipment has been put in. The director is a graduate of the Medical Department of Harvard in the four years' course, and served formerly as an athlete under Dr. Sargent. There is a separate gymnasium, thoroughly equipped, for women.

Athletic Grounds:

In addition to the gymnasium there are athletic grounds, with base-ball and foot-ball fields. These are enclosed, a grand-stand has been erected, and a track constructed for bicycling and running. These, with the tennis courts, will provide ample means of exercise for every student in the University. In recognition of the generosity of members of the Rollins family toward the Athletic Association, the field has been named by the Curators "The Rollins Athletic Field."

LECTURES AND SERMONS.

During the session the University invites a number of distinguished men to deliver public lectures to the students, and also a number of eminent ministers, who lead chapel exercises and preach in the Auditorium.

STUDENTS' PERIODICALS.

The students maintain and manage two periodicals. These are the *Independent* (bi-weekly), and the *Savitar* (annual).

SOCIETIES.

1. Literary:

There are connected with the University at Columbia, ten Literary Societies for students, the "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Medical Society," the "Agricultural Society," the "Engineers' Society," the "Missouri State University Debating Club," the "New Era Debating Club," "The Forum" (a Law school debating club); and the "Philaethean Society" (composed of young women only). These societies

hold weekly meetings for improvement in debate, declamation, oratory and composition, and form an important means of culture, especially in speaking and writing.

For societies at the School of Mines, see page 87.

2. Young Men's Christian Association :

The object of this organization, which dates its existence in the University from January 18, 1890, is the same as in other institutions of learning: namely, to represent and in every way to promote practical Christianity, particularly among the students. The work has been rich in good results.

Devotional exercises are held every Sunday afternoon. Classes hold weekly meetings for the study of the Bible, and special religious services are held from time to time.

A movement has been set on foot to erect a building to cost at least \$40,000, for the Young Men's and Young Women's Christian Associations. For this purpose, the former has already pledged the sum of \$6500, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in all the appointments necessary for the work of the association.

A lot immediately in front of the University Campus has been purchased for the site of this building at a cost of \$2,650, of which all but about \$900 has been paid.

The Association is at present using the old building which stood on the lot when purchased, having fitted up a reading and room for games for the benefit of the Association and its student friends. On the rear of the lot a tennis court has been built at a cost of \$26, which outclasses any on the Campus, and is one of the advantages offered by the Association.

At the beginning of each scholastic year a committee from the Y. M. C. A., to be recognized by their badges, meet students at the trains and freely render them valuable assistance in securing board by introducing them to friends and to officers of the University, and by various acts of kindness. A letter sent in advance to the President of the Young Men's Christian Association will receive prompt and cheerful attention.

The General Secretary, employed by the Association, has his office at the Association building, and is ever ready to render any aid to students that may be in his power.

The Association also offers, annually, to the public, particularly to the students, at actual cost, a series of literary and musical entertainments of high order and excellence. During the session of 1896-97 the following lectures and concerts were thus given:

John Thomas Concert Company; Temple Quartette; John Temple Graves, "The Twentieth Century Woman;" Sherwood Quartette; H. M. Wharton, "Horseback-ride Through Palestine;" John P. D. John, "Did Man Make God or God Make Man;" F. W. Gunsaulus, "Savonarola."

3. Young Women's Christian Association:

The Association, which is similar in its aims and methods to the foregoing, was organized April 2, 1891. Its object is the advancement of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Both of these Associations have enjoyed the hearty encouragement of all the authorities of the University.

4. Musical:

There also exist among the students Glee, Mandolin, Guitar and Banjo clubs, which form an attractive feature of University life.

5. Athletic Association:

For several years an Athletic Association has existed among the students. Under its direction and encouragement a Foot-ball Team, Tennis Teams and a Base-ball Team are each year organized; and in addition athletic exhibitions (indoor and outdoor) are given. The Spring Games on the new Athletic Field will soon, we hope, become Intercollegiate throughout the State.

6. Alumni:

The Alumni Association is composed of graduates of the University. It holds an annual meeting on Tuesday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this Society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about university life.

The fee for membership is \$2. This is added to the permanent fund, only the interest of which is used. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. The University Registrar, Irvin Switzler, solicits aid in securing facts for the next Triennial, and will be thankful for notices of officers and graduates, and for books, pamphlets and articles published by them.

The officers of the Association are: Charles E. Yeater, Sedalia, President; John H. Duncan, St. Louis, First Vice-president; Isidor Loeb, Columbia, Second Vice-President; N. T. Gentry, Columbia, Secretary; C. B. Rollins, Columbia, Treasurer.

A subscription fund of \$3000 has been raised and placed at interest, which is used in defraying the expenses of the annual meeting at Commencement—a very enjoyable and also a very profitable occasion. The

Alumni constitute, in fact, one of the largest elements in the life of the University, and, efficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State.

LOCAL CHAPTERS OF THE ALUMNI ASSOCIATION.

Chillicothe:

T. F. Spencer, President.
Scott C. Miller, Secretary.

Clarksville:

Dr. C. W. Pharr, President.
_____, Secretary.

Denver, Colorado:

Judge G. W. Miller, President.
J. T. Bottom, Secretary.

Fort Smith, Arkansas:

J. B. Gass, President.
F. A. Youmans, Secretary.

Huntsville:

_____, President.
Wm. Palmer, Secretary.

Jefferson City:

Henry W. Ewing, President.
Frank M. Brown, Secretary.

Kansas City:

Hon. W. S. Cowherd, President.
James Black, Secretary.

Macon City:

R. W. Barrow, President.
Dr. R. Gillaspy, Secretary.

Moberly:

Judge B. S. Head, President.
F. G. Ferris, Secretary.

Marshall:

Judge James Cooney, President.
William Murrell, Secretary.

Warsaw:

T. B. Wheeler, President.
Henry P. Lay, Secretary.

Sweet Springs:

Hon. Robert W. Prigmore, Presid't.
Judge V. C. Yantis, Secretary.

Richmond:

Thomas N. Lavelock, President.
F. P. Divelbiss, Secretary.

Santa Fe, New Mexico:

_____, President.
Judge N. B. Laughlin, Secretary.

Sedalia:

Louis Hoffman, President.
Hon. Chas. E. Yeater, Secretary.

Silver City, New Mexico:

G. W. Miles, President.
R. H. Thellman, Secretary.

Springfield:

Hon. J. C. Cravens, President.
J. P. Bates, Secretary.

Slater:

J. B. Land, President.
_____, Secretary.

St. Joseph:

Judge H. S. Kelley, President.
W. H. Utz, Secretary.

St. Louis:

H. B. Hilgeman, President.
H. Phillips, Secretary.

Baton Rouge, La.:

W. W. Clendenin, President.
W. R. Dodson, Secretary.

GIFTS TO THE UNIVERSITY.

Section 3820 of the Revised Statutes of Missouri, 1889, provides that whenever any moneys shall be paid into the State Treasury to be added to the "Seminary Fund" (which is but another name for the Endowment Fund of the University), and when the same shall amount to one thousand dollars, or more, a State Certificate of indebtedness shall be issued, due twenty years after date, and bearing interest at the rate of 5 per cent per annum, to be forever used and appropriated in accordance with law and the gift, grant or devise. Other sections of the University Act provide for the disposition of any other property, real or personal, which may be received by the University, and for its investment and preservation in accordance with the terms of the writing under which the grant, gift or devise is made. The State of Missouri is constituted the custodian and trustee of all funds so received, and is pledged for the safe-keeping, investment, and due application of the same, and all interest due thereon.

To the General Library :

	Vols.		Vols.
C. M. Barnes.....	1	S. B. Schuffelin.....	1
Thomas A. Davis.....	1	Wm. V. Byars.....	1
J. R. Bennett.....	1	P. C. Hubert.....	1
Dr. T. J. J. See.....	1	G. E. Stechert.....	1
Bureau International Exchange,		State Government.....	23
Uruguay	1	U. S. Government.....	339
National Education Association..	3		

The following periodicals have been presented to the Library:
American Economist, Apostolic Guide, Boonville Democrat, Central Baptist, Columbia Herald, Columbia Statesman, Hannibal Daily Journal, Industrialist, Kansas City Mail, Kansas City Live-stock Indicator, Linn County Bulletin, Marshall Democrat-News, Medical Mirror, Merck's Medical Bulletin, Mexico Intelligencer, Mexico Ledger, Jefferson City Tribune, Post-Dispatch (daily), Saline County Progress, The Presbyterian, Plattsburg Leader, Salisbury Gazette, St. Joseph Herald, St. Joseph Gazette.

To the Geological Department :

U. S. Geological Survey, map sheets.....	828	U. S. Geological Survey, bound volumes.....	27
U. S. Geological Survey, Atlas...	27	Weather Bureau, bound volumes	3
Weather Bureau, map sheets...	200	U. S. Geological Survey, pamphlets.....	110
Weather Bureau, Atlas.....	6	State Department, Washington City, bound volumes.....	37
Hydrographic office, map sheets	25		
Sup't of Documents, Atlas.....	5		

B. & O. R. R., photographs.....	6	G. C. Broadhead, 85 pamphlets, since bound into volumes.....	25
Canadian Pacific Railroad, photographs.....	1	Fossils, minerals and ores from Willard E. Winner, Kansas City, about.....	5000
Fitchburg Railroad, photographs.....	3	Specimens deposited by R. A. Blair of Sedalia, Mo., a lot of mastodon bones; also about 50 stones axes and over 100 chipped flints, arrow-heads, etc., with other articles.	
Arkansas Geological Survey, bound volumes.....	10	Collected by G. C. Broadhead, over 100 specimens and 50 species of fossils.	
New Jersey Geological Survey, bound volumes.....	5	From J. C. Edwards, fossil specimens.....	13
Ohio Geological Survey, bound volumes.....	2	From T. B. Perry, fossil specimens.....	4
Indiana Geological Survey, bound volumes.....	5	From R. M. Gennings, fossil specimens.....	20
Canada Geological Survey, bound volumes.....	1		
Minnesota Geological Survey, bound volumes.....	1		
Missouri Geological Survey, bound volumes.....	1		
Interior Department, volumes			
U. S. Geological Survey.....	8		

To the Agricultural College Library :

	Vols.		Vols.
Pennsylvania Board of Agr.....	8	Missouri Board of Agr	2
Michigan Board of Agr.....	2	Dept. of Agr. of U. S.....	4
Missouri Horticulture Society.....	2	American Shropshire Ass'n.....	1
American Aberdeen Angus Ass'n.	1	Holstein Friesian Association.....	1
American Hereford Ass'n.....	1	American Guernsey Cattle Club..	8

To the Agricultural Museum :

G. W. Spencer, specimens of corn.
G. A. Berry, specimens of corn.
Col. G. W. Waters, specimens of corn.
Missouri Experiment Station, 15 fertilizers.
Axford Fence Company, Fence Machine.

To the Agricultural College Reading Rooms :

Farmer's Friend; Farmer's Home: Ornamental and Forest Tree Grower: The Southern States; The Progressive South; Chicago Produce; Farm and Fireside; Prairie Farmer; The Sanitary Inspector; The Elgin Dairy Report; Farm, Stock and Home; Wallace's Farmer and Dairyman; Breeder's Gazette; Practical Farmer; The Successful Farmer; Agricultural South; New Ideas; Sheep Breeder and Wool Grower; The Industrialist; Western Agriculturist and Live Stock Journal; Agricultural Epitomist; Farmer's Advocate; Da-

kota Farmer; The American Creamery; Nebraska Farmer; Sugar Beet; Indiana Farmer; Farmer's Review; The Agricultural Student; Kansas Farmer; The American Fertilizer; West Virginia Farm Reporter; Fruit Grower's Journal; Farm and Home; The Western Soil Culture; Ohio Farmer; Pacific Coast Dairyman; Holstein Friesian Register; Industrial American; American Agriculturist; Poultry Journal; Home, Farm and Factory; The Bee Keeper's Review; The American Farmer; Texas Farm and Ranch; American Bee Journal; Southern Planter; Oregon Horticulturist; Hoard's Dairyman; Farming; American Hog and Corn Journal; American Horticulturist; Farmer's Guide; Western Plowman; Weather and Crops; Pacific Rural Press; California Cultivator; Northwest; Oregon Agriculturist; The Milk Reporter; Sun, Baltimore; Farmer's Magazine; The South West; American Horticulturist; Mirror and Farmer; The Homestead; Success with the Garden; American Cultivator; Rural New Yorker; Michigan Farmer; Farm Poultry; Poultry Topics; Michigan Poultry Breeder; The American Poultry Journal.

To the Horticultural Department :

Hon. J. C. Evans, raspberry plants.	S. C. Experiment Station, grape vines.
H. C. Groves & Sons, Nursery stock.	
Jas. B. Wild & Bros., rare plum trees and ornamental shrubs.	Professor M. Updegraff, rare South American seeds.
J. C. Vaughan, greenhouse plants.	

To the Experiment Station :

Tower Brothers, one cultivator.	Conrad Hartzell, one plow.
---------------------------------	----------------------------

To the Law Observatory :

Osservatorio Astronomico, Milan, Italy.....	8 pamphlets
Mr. John Tebbutt, Windsor, New South Wales.....	1 pamphlet
Herr A. Wolfer, Zürich, Switzerland.....	1 pamphlet
O. E. Schrötz, Christiano, Norway.....	1 pamphlet
Copenhagen Observatory, Copenhagen, Denmark.....	2 pamphlets
Baron D'Engelhardt, Dresden, Germany.....	1 book
Columbia College Observatory, New York.....	2 quarto pamphlets
Lick Observatory, Mt. Hamilton, Cal.....	1 book and 1 picture of Moon
Leander McCormic Observatory, University of Virginia.....	1 pamphlet
Washburn Observatory, Madison, Wis.....	1 book
Dr. Rudolph Wolf, Zürich, Switzerland.....	1 pamphlet
Mr. Walter Ficklin, Columbia, Mo.....	1 book
U. S. C. & G. Survey, Washington, D. C.....	1 book and 2 pamphlets
Smithsonian Institution, Washington, D. C.....	1 book
U. S. Weather Bureau, Washington, D. C.....	
.....	1 monthly periodical and 2 pamphlets
U. S. Dept. of Agriculture, Washington, D. C.....	1 book

University Observatory, Strasburg, Germany.....1 quarto book
Milton Updegraff, Columbia, Mo.....5 books and 7 pamphlets.

To the Political Science Library :

	Vols.		Vols.
Auditor of State of Ohio.....	1	Auditor of State of Nebraska.....	1
“ “ Kansas.....	1	Secretary of State of Wisconsin.....	1
“ “ Michigan.....	1	U. S. Civil Service Commission.....	8
“ “ Iowa.....	1	Supervisor B. & L. Ass'ns. of Mo....	1
“ “ Minnesota.....	1	Auditor of State of Missouri.....	2
“ “ Illinois.....	1	Railroad Commissioners of Mo.....	2
“ “ Indiana.....	2	President R. H. Jesse.....	
		..... Wall map of U. S..	

To Library of Romance Languages :

	Vols.		Vols.
Students and anonymous friends...	9	Dr. P. Passy, Paris.....	1
H. Weltner, Paris.....	1		

Students and anonymous friends, 26 pamphlets, and a subscription for one year to the Journal des Debats.

B. THE SCHOOL OF MINES AND METALLURGY, AT ROLLA.

Buildings and Equipment :

Main Building.—The buildings of the School of Mines are situated in the most elevated part of the town of Rolla. They are substantial brick structures, well ventilated and lighted. The main building and the mining laboratory are heated by steam. The main building contains the assembly-room, the library, lecture rooms for the Professors of Engineering, Mathematics, Physics, and for Academic work, the Physical laboratory, offices of Executive Committee and Director, etc., and accommodates in its basement (temporarily, it is hoped) the Shop. For the work in Engineering there is ample provision of field instruments, and a beginning has been made in the acquisition of testing apparatus.

Physical Laboratory —The Physical laboratory has recently received several thousand dollars' worth of apparatus, and its equipment is being augmented from time to time. It is especially strong on the side of electricity, and comprises two dynamos, with which a small electric lighting plant is maintained.

Chemical Laboratory.—The Chemical laboratory is housed in a separate building, admirably adapted to its occupancy. This contains a lecture-room, qualitative laboratory, quantitative laboratory, Professor's laboratory, assay laboratory, weighing-room, evaporating-room, preparation-room, supply-room, and basement. Facilities for heat, light and ventila-

tion, and for carrying off foul or noxious gases, are excellent. Gas and water are supplied to each table. The assay laboratory, which is on the first floor, is amply provided with the proper furnaces, ore-crusher, pulverizing plate, balances, etc., and throughout the whole building the arrangement and equipment are such as to leave little to be desired.

Mining and Metallurgical Laboratory.—The Mining and Metallurgical laboratory, for which the 37th Assembly made an appropriation of \$25,000, is now completed. In addition to provision for instruction, both by lectures and by laboratory methods, in Mineralogy and in Geology, there is a special laboratory fitted with full-sized working machinery and the needed furnaces for practical illustration of the processes of ore-dressing and of metallurgy.

In the second story is a drawing-room of about 600 square feet of floor space, lighted from the top by sky-lights.

Gifts to the School of Mines.—From the Ingersoll-Sergeant Drill Co., one steam drill; from the St. Joseph Lead Co., and Mr. Rowland Hazard of Mine La Motte, lead ore; from Mr. Frank W. Wilson of New York, Mr. J. E. Kirkham of Kansas City, and Mr. Rowland Cox of Aspen, Colorado, blue prints of bridge and mine work; from Mr. Aug. Nasse of St. Louis, mineral specimens; from the Hons. Joel D. Hubbard and Richard P. Bland, government publications; from Hon. David R. Francis, Secretary of the Interior, Historical map of U. S.

Library.—The library contains about 3,700 volumes. It is well provided with scientific and technical works designed to afford the student an opportunity of supplementing his class-work by collateral reading. There is also a respectable collection of works of general literature. On its reading-tables the leading scientific periodicals and others of general or literary interest are accessible. The library is open daily from 8 a. m. to 4 p. m.

Club-house.—The students' club-house or dormitory is a handsome three-story building, erected in 1890, and contains room enough for twenty-five or thirty lodgers. The dining-room and kitchen can supply board for sixty. No charge is made for room-rent, but each occupant of a room is required to make a deposit of \$5 to pay for any damages for which he may be responsible—the unconsumed portion of this fund being returned to him at the end of the session. The cost of board, including lights and heat, is at present \$13 a month. Any one who may wish to engage a room should make an early application, accompanying it with the five-dollar deposit.

Expenses :

An entrance fee of \$10 and a library fee of \$2 each semester are the only general charges. Students in the Chemical laboratory pay for material consumed and apparatus broken, to provide for which emergencies a deposit of \$10 is made at the beginning of the year, this sum being in-

creased to \$15 for those taking a "special" or "assay" course. The unused portion of this deposit is returned at the end of the year.

Board, fuel, lights, and washing, can be had for from \$12 to \$16 a month. The necessary expenses range from \$140 to \$200 a year.

Athletics :

Through the liberality of the Curators an athletic field has been enclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students.

Students' Societies :

A society composed of both students and professors meets fortnightly to discuss topics of contemporary interest, scientific, literary, and historical. The advanced students in the Chemical Laboratory conduct a "Journal Club."

Examinations :

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

Monthly Reports :

Regular monthly reports are sent to the parents or guardians of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

For more detailed information, the special catalogue issued by the College will be sent upon application to the Director, Prof. W. B. Richards, Rolla, Mo.

DEPARTMENTS OF THE UNIVERSITY.

The University comprises the following departments:

I—ACADEMIC DEPARTMENT.

II—NORMAL DEPARTMENT.

III—DEPARTMENT OF LAW.

IV—DEPARTMENT OF MEDICINE.

V—DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

VI—COLLEGE OF AGRICULTURE AND MECHANIC ARTS, embracing the

A. *School of Agriculture ;*

B. *School of Mechanic Arts ;*

C. *School of Engineering ;*

D. *School of Mines and Metallurgy ;*

E. *Experiment Station.*

[These six departments are established and made co-ordinate by the statutes of Missouri.]

VII—GRADUATE DEPARTMENT.

I. Academic Department.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediæval History.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature, and Dean of the Department.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy, and Curator of the Geological Museum.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, Assistant Professor of Mathematics, and Director of the Observatory.

†JOHN MILLER BURNAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,

Professor of Classical Archaeology, Assistant Professor of Greek, and Curator of Museum of Classical Archaeology.

FRANK THILLY, B. A., Ph. D.,

Professor of Philosophy.

LUTHER MARION DEFOE, A. B.,

Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B., Ph. D.,

Acting Professor of History and Political Economy.

BENJAMIN FRANKLIN HOFFMAN, M. L.,

Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

†Absent for session of 1896-7.

RAYMOND WEEKS, A. M.,

Professor of Romance Languages.

MATTHEW B. HAMMOND, Ph. B., M. L.,

Acting Assistant Professor of Political Economy.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

JOHN BUTLEDGE SCOTT, A. M.,

Professor of Elocution.

WILLIAM VAN ALLEN CATRON, A. M.,

Acting Assistant Professor of Latin Language and Literature.

SILAS DINSMOOR, A. B.,

Instructor in Chemistry.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Instructor in Geology and Mineralogy.

CHARLES HENRY THOMPSON, B. S.,

Instructor in Botany.

EDGAR E. BRANDON, A. B.,

Teaching Fellow in Romance Languages.

INEZ RIGGS, M. L.,

Teaching Fellow in Germanic Languages.

FRANCIS POTTER DANIELLS, A. B.,

Teaching Fellow in Latin.

REQUIREMENTS FOR ADMISSION.

The following are the requirements for admission by examination to the Freshman class in the Academic Department:

To the A. B. Course:

1. **LATIN.** Five books of Cæsar's Gallic War, four orations of Cicero, and Allen's Prose Composition. For two books of the Gallic War, eight books of Eutropius, or an equivalent of the *Viri Romæ*, may be substituted. Mastery of the essentials of etymology and syntax is expected.

2. **GREEK.** Three books of Xenophon's Anabasis, Woodruff's Greek Prose Composition, Goodwin's Greek Grammar.

This work may be accomplished in two years. A student may, for the session of 1897-98, substitute for the second year's work in Greek one year of history or one year of science. In that case he will be admitted if he is prepared to take up the Anabasis. White's First Greek Book will be useful for doing the first year's work.

3. **ENGLISH. A. In General.**—No pupil will be accepted in English whose written work is notably defective in point of *spelling, punctuation, idiom, or division into paragraphs.*

B. English Composition.—(1) The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself, from a considerable number set before him in the examination paper. One of the topics chosen must be taken from the books assigned for general reading under English Literature. (2) In place of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of his school compositions, at least six in number, on topics taken from the prescribed course of reading, and certified to by his last English instructor as in his opinion the unaided work of the pupil.

C. English Literature.

1. For General Reading and Composition work:

1897: Shakespeare's "As You Like It;" Defoe's "History of the Plague in London;" Irving's "Tales of a Traveller;" Hawthorne's "Twice Told Tales;" Longfellow's "Evangeline;" George Eliot's "Silas Marner."

1898: Milton's "Paradise Lost" (Books I and II); Pope's "Iliad" (Books I and XXII); "The Sir Roger de Coverley Papers" in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "Ancient Mariner;" Southey's "Life of Nelson;" Carlyle's "Essay on Burns;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1899: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" DeQuincey's "Flight of a Tartar Tribe;" Cooper's "Last

of the Mohicans;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1900: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger de Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the Mohicans;" Tennyson's "Princess;" Lowell's "Vision of Sir Launfal."

2. For Minute and Critical Study:

1897: Shakspeare's "The Merchant of Venice;" Burke's "Speech on Conciliation with America;" Scott's "Marmion;" Macaulay's "Life of Samuel Johnson."

1898: Shakspeare's "Macbeth;" Burke's "Speech on Conciliation with America;" De Quincey's "Flight of a Tartar Tribe;" Tennyson's "The Princess."

1899: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Carlyle's "Essay on Burns."

1900: "Macbeth;" "Paradise Lost" (I and II); Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

D. *English Grammar*.—There will be included in the requirement for entrance knowledge of the leading facts of English Grammar, and proper tests of such knowledge will be made a part of the examination.

4. MATHEMATICS. Algebra and Plane Geometry. The equivalent of Smith's Elementary Algebra and of Wentworth's or Bowser's Plane Geometry is required.

5. HISTORY. General History—the equivalent of the work given in Myer's "General History."

To the B. L. Course:

1. LATIN. Same as for A. B. See above.

2. ENGLISH. Same as for A. B.

3. MATHEMATICS. Same as for A. B.

4. SCIENCE. One year's work, with laboratory practice, in any one of the following Sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. HISTORY. (A.) General History (as above for A. B.); (B.) History of England, and of the United States—the equivalent of the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution."

To the B. S. Course:

1. FRENCH and GERMAN—two years' work.

The two years' work in German, when offered, shall mean the ability to read at sight ordinary prose, to translate simple English sentences into German; and it includes a correct pronounciation of the language. The two years' work in French, when offered, implies the same ability in French as has been described above in German.

2. ENGLISH. Same as for A. B.

3. **MATHEMATICS.** Same as for A. B.

4. **SCIENCE.** One year's work each, with laboratory practice, in any *two* of the following Sciences: Biology (Zoology and Botany), Physics, Chemistry.

5. **HISTORY.** Same as for B. L.

The time to be given to each of the above requirements, and the character of the work required in each subject for admission to the Freshman class, are given in detail in the courses outlined for schools approved by the University. See pages 45-50.

Value in Units:

If a unit be defined as a year's work in a subject with five (5) periods a week in the class room or laboratory, and a period as about forty (40) minutes, then the subjects required for admission to the Freshman class have the following values in units: English, 3 units; Latin, 3; Greek, 2; Mathematics, 3; History, 1 or 2; Physics, 1; Chemistry, 1; Biology, 1.

The requirements for entrance by examination to the several Academic courses are as follows:

<i>A. B.</i>	<i>B. L.</i>	<i>B. S.</i>
English..... 3 units	English. 3 units	English 3 units
Math..... 3 "	Math..... 3 "	Math..... 3 "
History..... 1 "	History..... 2 "	History..... 2 "
Latin 3 "	Latin 3 "	French or Ger.. 2 "
Greek..... 2 "	Science..... 1 "	Science..... 2 "
Total..... 12 "	Total..... 12 "	Total..... 12 "

In the B. S. course, the student may offer for the two years of French or German two years of Latin. The University will for the present accept this substitution, but does not recommend it. For the session of 1897-98 the applicant for admission may substitute for the second year in Greek a second year in History or one year in Science. It should be understood, however, that no substitute may be offered unless the student has, in the entrance examination, made a passing grade thereon.

To be admitted to the Academic Department by examination, the student must pass on at least ten (10) units; on the other two (2) he may be conditioned. The deficiency of two units may be in one subject, or in two; but where three units are required in any subject, the student must pass on at least two in order to receive any credit in that subject. All conditions must be made up under the direction of the Professor in charge of that subject. If the student is permitted to make up a condition in the University, such work shall not count toward a degree.

Time of Examinations:

Examinations for admission will be held at the University May 29 to June 4, and September 9 to 13, 1897. All persons desiring to enter the University at the opening of the session in the fall of 1897, except those holding

certificates of graduation from approved schools and those who have already otherwise fulfilled the entrance conditions, must present themselves at the Registrar's office, room 4, Academic Hall, at 8:30 a. m., Thursday, September 9. They will then receive complete directions as to examinations.

The program of examinations is as follows:

THURSDAY, SEPTEMBER 9.

9 a. m.: English.

2 p. m.: Mathematics.

FRIDAY, SEPTEMBER 10.

9 a. m.: Latin, French, German.

2 p. m.: Physics.

SATURDAY, SEPTEMBER 11.

9 a. m.: Biology, Greek.

2 p. m.: General History.

MONDAY, SEPTEMBER 13.

10 a. m.: U. S. History.

2 p. m.: Chemistry.

Admission from Approved Schools:

For the admission of graduates of approved schools upon their diplomas, see page 45; and of graduates of the State Normal Schools, see page 52.

Acceptance of Grades:

Students who do not hold diplomas from approved schools (page 51), may present their grades in any subject, but the acceptance of these grades in place of an examination in that subject rests wholly in the will of the Professor of the subject.

Advanced Standing:

Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance; of his fitness for advanced work he must satisfy, by examination or otherwise, the Professor of the subject in which he wishes to take work higher than the Freshman.

Special Students:

Special students will be admitted to the University without passing the regular examination required for entrance under the following conditions: (1) They must be at least 21 years of age; (2) they must show good reason for not taking a regular course; (3) they must pass such examination or

other tests as shall demonstrate fitness to pursue profitably all the studies in the course selected by them; (4) they will not be allowed to take work in more than two subjects with such kindred work as the head professors may suggest; (5) ~~the~~ **the advisory** committee for each special student shall consist of the head professor or professors with whom the student desires to pursue work.

Graduate Students :

Students holding academic degrees from reputable institutions will be admitted to advanced undergraduate and to graduate courses upon application to the Committee on Graduate Degrees, and presentation of their diplomas in evidence. By special permission of the Faculty, persons of liberal education, who are not academic graduates, may be admitted to graduate courses. See announcement of the "Graduate Department."

CONDITIONS FOR THE APPROVAL OF SCHOOLS.

Hereafter schools will be approved upon the adoption of the following course, and the sign that this course has been adopted will be an agreement between the University and the school authorities. This agreement is to be signed on the one hand by the President of the University, and on the other hand by the Principal of the High School, the President of the School Board, and the Superintendent of Public Schools of the town in which the High School is situated. In the case of Private Schools or Colleges, it should be signed by the Principal or President, and by the President of the Trustees. Printed copies of this agreement will be sent to any school seeking approval. It specifies—

1. That the school authorities have made their course of study meet fully the requirements proposed by the University.
2. That the first diploma issued under the new course of study will bear a specified date.
3. That the employment of inefficient teachers in the school will at any time justify the University in severing the relation.
4. That the University on its part will, after the date specified, admit without examination to the Freshman class in any Course for which they have been duly prepared, such graduates of the school as bring proper credentials of the fact that they are recommended for that class by the school authorities; and it will admit free of tuition for the first year the student graduating from the school with the highest honors. The credentials will be (1) the diploma of the school; (2) a certificate from the Superintendent or the Principal stating that the diploma was won in a

course for which the school had been approved. Forms of certificates are furnished by the University.

5. That the University will send from time to time representatives of the Faculty to visit the school, and will endeavor to promote, in every way possible, its welfare.*

It is distinctly understood that the Course of Study outlined below is a minimum course. It is earnestly hoped that all the Secondary Schools of Missouri will soon be able to make their courses four years long. Many branches of study usually taught in Secondary Schools are not mentioned below. The Course prescribed gives not what should be taught in these Schools, but merely the minimum required by the University for entrance to its Freshman class.

1. *Latin*, not less than five (5) periods a week, continued not less than three (3) years.

In this time it is expected that the student will acquire such a vocabulary and such a knowledge of inflections and syntax as to be able to read readily simple Latin prose, with accurate quantitative pronunciation of the words. The best method of reaching these results cannot be given here. They will be found fully stated in the "Report of Committee on Secondary Schools" in the section on Latin. It may be said, however, that correct pronunciation in the teacher is indispensable to correct pronunciation in the pupil, and that in the acquisition of a vocabulary and the mastery of inflections, nothing can take the place of the frequent reviews.

It is expected that the student in three years will read five books of Cæsar's Gallic War and four of Cicero's Orations. For two books of the Gallic War, eight books of Eutropius or an equivalent in time of the *Viri Romæ* may be substituted where it is preferred.

If the students are immature, it will be found best to use some simple beginner's book, and to follow this by Eutropius or *Viri Romæ* as a bridge to Cæsar. If, however, the students are mature, it will be found that no bridge to Cæsar is needed, provided that some strong beginner's book is used and the students are required to master it before taking up Cæsar.

The reading should be accompanied by a careful and systematic review of grammatical forms, and by a study of the leading principles of syntax. At least one exercise a week should be given to rendering English into Latin. The Roman method of pronunciation is strongly recommended, and teachers are urged to give strict attention to accurate pronunciation according to quantity from the outset. Students will be admitted who have not been trained in the Roman method; but they will work at a great disadvantage throughout the entire course. The Mythology of Greece and Rome and the History of the Roman people should be carefully taught. Map-

*The University has now a regularly appointed representative in the Examiner of Schools. See page 53.

drawing is invaluable for impressing upon the mind the geography of the Ancient World.

2. *English*, not less than five (5) periods a week, continued not less than three (3) years. It is recommended that one-half of the time allotted to English be given to the study of literature, by which is meant not the study of a manual on the history of literature, but literature itself in the selected works of representative authors. Masterpieces, as a whole, suited to the attainments of the class, should be read in class and carefully examined, while other works may be assigned as collateral reading, of which written reports should be required.

In the first year, along with the literature, frequent practice in composition, with or without a text-book on Rhetoric, is strongly urged.

In the second year, the literature is to be continued throughout, and with the exercises in Composition, formal Rhetoric may be introduced, or if previously begun, continued. In the teaching of Composition and Rhetoric, chief emphasis should be thrown upon practice in writing. If formal Rhetoric is taught as a separate discipline, it should be of an elementary character, and contributory to the Composition.

In the third year, along with literature and composition, grammar, based on historical principles, might be profitably studied. In case English is extended through 4 years, such grammatical study, in our judgment, should be postponed until the last year.

In the fourth year, in connection with a wider range of reading in literature, an outline or syllabus or a brief history of the literature may be conveniently used, but, possessing little or no culture value, it should always be subordinated to the study of literature itself, and reserved, if used at all, for the last year of the course.

If only three years be given to English, the course outlined for these three years will have taken into view English (1) as a means of expression, (2) as a literature, (3) as a language—all so intimately connected, however, that the proper study of each will bear indirectly upon the other two.

NOTE.—Excellent and inexpensive editions in English and American Classics are now offered by many of our publishing houses. The teacher of English will, doubtless, have a preference for one or another of these series, or for some works of one series and some of another. Meiklejohn's Grammar, in lieu of a better work, or Whitney and Lockwood's, or Longman's from Part II, will be found suitable for this course.

3. *Mathematics*, not less than five (5) periods a week, continued not less than three (3) years, and devoted exclusively to Algebra and Geometry. Any other study in Mathematics given in addition to these must be given in additional time. In these three years it is expected that the student will finish Algebra and Plane Geometry. We require the full equivalent of what is contained in Smith's Elementary Algebra and Wentworth's or Bowser's Plane Geometry. Bright students under good instruction will be able to finish in the three years the Algebra, Plane Geometry and several

books (if indeed not the whole) of Solid Geometry. For the fourth year we recommend that Solid Geometry be completed, and also Plane Trigonometry.

The following text-books on Algebra and Geometry are especially recommended: Hall & Knight's Elementary Algebra, revised by Prof. Sevenoak, published by the Macmillan Co.; Chauvenet's Geometry, published by J. B. Lippincott Co.

4. *Science*.—It is expected that not less than five (5) periods a week for an entire year be given to each of two sciences. Of the five periods, at least three (3) should be devoted to laboratory work. For this no outside preparation is required of the pupil. The remaining periods may be given to text-book work and lectures, and experiments illustrating the text. The two Sciences must be taken from this group—Biology (Botany and Zoology), Physics and Chemistry. If Biology be chosen, half a year may be given to Botany and half a year to Zoology; but we recommend that the whole year be given to either one or the other of these branches of the subject. We *recommend* that every school teach all three of these sciences, and moreover provide good instruction in Physical Geography and Meteorology.

NOTE.—During the summer of 1897 a School of Science will be conducted at the University, in which Laboratory courses of six weeks each will be given in Biology, Physics and Chemistry. These courses are designed to prepare teachers to give instruction in these sciences in the Secondary Schools of the State, and especially in those schools which are approved by the University or which are seeking approval. For further particulars see Appendix I.

5. *History*, not less than five (5) periods a week for two (2) years. The first year shall be devoted to General History equivalent to the work given in Myer's General History. The second year shall be devoted to the History of England and of the United States equivalent to the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution."

It is impossible to understand the life, the literature or the institutions of the ancient world without an accurate study of Mythology. We therefore recommend that every school make provision for this most important study. Some schools may see fit to combine it with the study of History, others with that of Literature, and others may prefer to give four periods a week to Latin or Greek, and the fifth period of each week to Mythology. Other schools may provide for it in other ways. But, in our opinion, no school should, under any condition, omit adequate treatment of the subject. There are some excellent text-books. We especially recommend Guerber's "Myths of Greece and Rome." Invaluable auxiliary reading may be found in Church's Stories from Homer, Virgil, Herodotus, the Greek Tragedians, etc. Any school would be amply repaid by adding to its library, without further inquiry, any book of stories bearing the name of Alfred J. Church. Some of them are in Macmillan's School Library, and

most of them are published by Dodd, Mead & Co., New York. Teachers of the classics find in them quite as much pleasure as their pupils.

6. *Greek*, not less than five (5) periods a week for not less than two (2) years.

In this time the student is expected to learn thoroughly the declension of nouns and adjectives, the conjugation of verbs and the ordinary principles of syntax. He should be able to read with facility ordinary Greek prose, such as Xenophon's *Anabasis*, and to translate easy sentences from English into Greek. The knowledge of the accent must be insisted on. To secure this end, we recommend for the first year:

White's First Greek Book and Gleason's Gate to the *Anabasis*, Ginn & Co., Chicago.

For the second year:

Goodwin's Greek Grammar (Ginn & Co., Chicago); Xenophon's *Anabasis* (three books), Harper and Wallace (American Book Co., Chicago); Woodruff's Greek Prose Composition (Leach, Shewell & Sanborn, Boston).

This requirement is made of those schools only which desire to prepare students for the Freshman class of the A. B. course.

Any school that gives two years' instruction in Greek, as outlined above, may omit all instruction in Science; but we strongly *recommend* that every school, besides teaching Greek, give at least one year to thorough work in at least *one* of the Sciences mentioned above under No. 4. For the A. B. course, Biology will prove most valuable.

7. *Modern Languages*.—Schools which prepare students for the B. S. course or for the Engineering courses should give two years' work in German or two years' work in French, instead of two years' work in Latin.

The requirements in French or German represent an amount of knowledge which should be gained by two years of consecutive study, five times a week. Thorough acquaintance with the elements of the grammar is of course expected. In addition, a considerable amount of proficiency in translating at sight into English will be required. To obtain this proficiency, students must have careful and systematic training in reading at sight, and this should be begun during the first months of study. In addition to the above, a good pronunciation is insisted on.

In German, Thomas's Grammar is recommended; in French, Grandgent's, Chardenal's (Allyn & Bacon) or Edgren's are the best. To use Grandgent's Grammar intelligently, the teacher should have special instruction as to the meaning of the phonetic signs used. As for texts, nearly all the publications of the following firms are recommended as excellent: Ginn & Co., Holt & Co., Heath & Co., Allyn & Bacon, W. R. Jenkins, Macmillan, Christopher Sower & Co. (Philadelphia).

We earnestly recommend that under no circumstances shall any school require of its pupils more than 20 periods of work a week demanding preparation. We think less than this advisable. Ample time should be given

for reading, and every Secondary School should contain a good library as well as good laboratories. A library may be rather small and still good. If possible, a librarian should be employed to do nothing else but keep the books and help the pupils in their choice of reading matter.

By a "period" we mean 40 minutes of time devoted to actual teaching, with 5 minutes more for changing class—the total 45 minutes.

By "session" we mean about 9 months.

This is all in amount that for the present at least the University requires for approval; but as to teachers, we strongly recommend that English and Latin on the one hand and Mathematics and Science on the other hand be taught by graduates of Universities or Colleges of unquestionable reputation; or by those who have taken equivalent courses in these subjects.

Schools should provide rooms, fixtures and apparatus suitable for laboratory work, without which it is impossible to teach science well; but it should be remembered that in the equipment of a laboratory the first step is to secure a thoroughly competent teacher. If it be desired, the University will gladly forward information about the proper equipment of laboratories, or will even send a Professor to aid the school in completing its original outfit.

It is of great importance that only good text-books be used, and information about them is always cheerfully given.

All of the courses recommended by the "Committee of Ten" involve the study of at least one Modern Language. In the teaching of Modern Languages, we desire to emphasize the importance of thorough and accurate drill in pronunciation. In Greek, the pronunciation should be strictly according to the printed accent, and in both Latin and Greek much pains should be taken from the first to distinguish in pronunciation short and long syllables. Phonology is of great importance in the study of languages.

APPROVED SCHOOLS.

Approved for B. L., & B. S. Courses.

School.	Sup't and Principal.
Appleton City Academy, Appleton City, Mo..	G. A. Thielman.....
Bethany High School.....	J. R. Hale.....
Bolivar High School.....	Cary T. Wright.....
Carthage High School.....	{ W. T. Stephens.....
	{ E. E. Dodd.....
Carrollton High School.....	{ L. W. Rader.....
	{ Mrs. R. R. Quisenberry.....
Ft. Smith High School, Ft. Smith, Ark.....	J. L. Holloway.....
Harrisonville High School.....	A. F. Treakle.....
Higginsville High School.....	H. B. Walker.....
Independence High School.....	{ Wm. F. Bahlman.....
	{ Wm. L. C. Palmer.....
Joplin High School.....	{ W. B. Brown.....
	{ J. D. Elft.....
Lamar High School.....	W. H. Martin.....
Lancaster High School.....	W. C. Thompson.....
Louisiana High School.....	{ A. P. Settle.....
	{ R. R. Rowley.....
Maryville High School.....	{ A. E. Clarendon.....
	{ B. F. Duncan.....
Miami High School.....	E. E. Barnett.....
Mexico High School.....	{ D. A. McMillen.....
	{ O. K. Brown.....
Moberly High School.....	{ J. A. Whiteford.....
	{ H. H. Holmes.....
Monroe City High School.....	R. S. Nichols.....
Mound City High School.....	J. P. Coleman.....
Montgomery City High School.....	L. J. Hall.....
Nevada High School.....	W. J. Hawkins.....
Paris High School.....	W. D. Christian.....
Richmond High School.....	{ J. M. Bally.....
	{ J. E. Dunn.....
Rockport High School.....	B. F. Brown.....
Shelbina High School.....	J. T. Vaughn.....
Slater High School.....	G. W. Newton.....
Springfield High School.....	{ J. Fairbanks.....
	{ W. T. Carrington.....
Trenton High School.....	{ H. E. DuBois.....
	{ E. M. Painter.....
Westport High School.....	{ S. A. Underwood.....
	{ Sarah E. Steele.....

Approved for A. B. Course.

Brookfield College, Brookfield, Mo.....	M. H. Reaser.....
Mt. Vernon Academy, Mt. Vernon, Mo.....	G. H. Pollard.....

Approved for B. L. and A. B. Courses.

Marionville Collegiate Institute, Marionville.	M. L. Curl.....
--	-----------------

Approved for all Courses.

School.	Sup't and Principal.
Buchanan College, Troy, Mo.....	W. F. Roberts.....
Butler Academy, Butler.....	John W. Richardson.....
Cameron High School.....	{ B. Riggs.....
Chillicothe High School.....	{ Miss Bertha Ensign.....
Clinton High School.....	{ W. F. Jamison.....
Culver Military Academy, Culver, Ind.....	{ S. E. Stout.....
Columbia High School.....	{ C. B. Reynolds.....
Hannibal High School.....	{ Mrs. C. C. Price.....
Kansas City High School.....	A. F. Fleet.....
Kemper Family School, Boonville, Mo.....	R. H. Emberson.....
Kirkwood High School.....	{ R. B. Simonson.....
Michigan Military Academy, Orchard Lake..	{ Miss Gertrude Ashmore.....
Marshall High School.....	{ J. M. Greenwood.....
Sedalia High School.....	{ John T. Buchanan.....
St. Joseph High School.....	T. A. Johnson.....
St. James Mil. Academy, Macon City, Mo.....	W. S. Dearmont.....
St. Louis High School.....	W. H. Butts.....
University Academy, Columbia, Mo.....	{ T. E. Spencer.....
Wentworth Mil. Academy, Lexington, Mo....	{ C. A. Snodgrass.....
Woodson Institute, Richmond.....	{ G. V. Buchanan.....
	{ J. D. Wilson.....
	{ Edward B. Neely.....
	{ C. E. Miller.....
	F. W. Blees.....
	{ F. Louis Soldan.....
	{ Wm. J. S. Bryant.....
	G. H. Beasley.....
	Sanford Sellers.....
	B. G. Shackelford.....

Where two names are given, the first is that of the Superintendent and the second that of the Principal.

Changes in Approved Schools :

Since the publication of the last Catalogue, the following changes have been made in the list of "Approved Schools:"

Butler Academy (Butler), Culver Military Institute (Culver, Indiana), Woodson Institute (Richmond, Mo.), have been added to the list of schools approved for all courses.

The High Schools of Kirkwood, Marshall and Sedalia, which were approved for B. S. and B. L. courses only, are now approved for all courses, and Marionville Collegiate Institute, which was approved for A. B. course only, is now approved for A. B. and B. L. courses.

Normal Schools :

Graduates of the three State Normal Schools in the advanced course of study as recently established will be admitted to the University without examination and permitted to enter those classes in any subject for which, in the judgment of the head Professor, they are prepared. The University, as is well known, has no classes below the Freshman.

Examiner of Schools:

The position of Examiner of Schools has been established by the Board of Curators to facilitate the work of bringing the secondary schools into close connection with the University. Mr. J. M. White of Carthage entered upon the duties of this office at the beginning of the year. Superintendent Kirk, in the 47th "Report of the Public Schools," speaks as follows of this office: "I look upon the office of High School Examiner for the University as one of the most important ever created by that institution. It will, without doubt, aid in bringing all secondary schools into more intimate and definite relation with the University and with other institutions of high learning."

ACADEMIC COURSES.

In the Academic department there are three courses of study, one leading to the degree of Bachelor of Arts (A. B.), one to the degree of Bachelor of Letters (B. L.), and one to the degree of Bachelor of Science (B. S.). In the A. B. course, prominence is given to Classics and Philosophy; in the B. L. course, to Modern Languages (including English), History, and Political Economy; and in the B. S. course, to Mathematics and the Sciences. On reaching the Junior year, the candidate for a degree in any course chooses, in addition to the prescribed work, such work as he may prefer.

Taking as the unit one hour a week for one semester, the electives in the A. B. course amount to 38 hours, in the B. L. course to 41 hours, and in the B. S. course to 44 hours.

The student may apply his electives to any Academic elective course for which he is prepared, or to any regular Academic study not required in the course that he is pursuing, or to any of the following courses offered in other Departments:

From the Normal Department: Pedagogy, for not more than three hours a week for two semesters.

From the School of Agriculture: Entomology, for not more than three hours a week for two semesters.

From the Medical Department: Anatomy or Physiology from the First Year, or both, or Bacteriology from the Second Year, for not more than six hours a week for two semesters.

From the School of Engineering: Thermodynamics, for not more than two hours a week for one semester; Descriptive Geometry, Electrical Measurements, each for not more than four hours a week for one semester; Applied Mechanics, for not more than four hours a week for two semesters; Astronomy, for not more than five hours a week for one semester; and Mathe-

matical Theory of Stresses, for not more than three hours a week for one semester.

The maximum time, however, given to courses in other Departments must not exceed twelve hours for one semester.

In the Junior or the Senior year, furthermore, Academic students may take Elocution three hours a week for two semesters, and receive a credit toward the Academic degree of one hour's work for each semester.

The student may give all his electives to one study, or divide the time as he may deem proper among the eligible studies.

When the student has elected a subject that he has not studied before, he must pursue it for at least two semesters unless the subject is completed in less time. Electives are open only to Juniors, Seniors, and Graduates. Juniors and Seniors who have Freshman or Sophomore work to make up must, in making out their cards, give such work precedence over elective work. A student who is behind his class in one or two subjects, or has been conditioned or failed to pass in any subject, may make up in the summer school, work not exceeding, in any one summer, the equivalent of four (4) hours for one semester of lecture-room work or six (6) hours for one semester of laboratory work (see Appendix I.)

Students may not change from one course to another in a session without permission of the Faculty.

SCHEME OF STUDIES.

A. B.	B. L.	B. S.
<i>Freshman, First Semester</i>	<i>Freshman, First Semester</i>	<i>Freshman, First Semester</i>
8:30. English, M. F... 2	8:30. Eng., T. Th. S... 3	8:30. Eng., M. F..... 2
9:30. Latin, T. W. Th.	8:30. Ger. or Fr., M.	8:30. Ger. or Fr., T.
F. S..... 5	W. F..... 3	Th. S..... 3
10:30. Greek, M. T. Th.	9:30. Latin, T. W. Th.	9:30. Chem., M. W.... 2
S..... 4	F. S..... 5	10:30. Biology, W. F... 2
10:30. Science, M. M.	9:30. or	11:30. Math., M. T. Th.
W. F..... 4	10:30. Science, M. M.	F. S..... 5
11:30. Math., T. Th. S.. 3	W. F..... 4	1:30. Biol. Lab., Th. S. 2
	11:30. Math., T. Th. S. 3	1:30. Chem. Lab., T. W 2
<i>Freshman, Second Semester</i>	<i>Freshman, Second Semester</i>	<i>Freshman, Second Semester</i>
8:30. English, M. F... 2	8:30. Eng., T. Th. S... 3	8:30. English, M. F... 2
9:30. Latin, T. W. Th.	8:30. Ger. or Fr., M.	8:30. Ger. or Fr., T. Th
F. S..... 5	W. F..... 3	S..... 3
10:30. Greek, M. T. Th.	9:30. Latin, T. W. Th.	9:30. Chem., M. W.... 2
S..... 4	F. S..... 5	10:30. Biology, W. F... 2
10:30. Science, M. M.	9:30. or	11:30. Math., M. T. Th.
W. F..... 4	10:30. Science, M. M.	F. S..... 5
11:30. Math., T. Th. S.. 3	W. F..... 4	1:30. Biol. Lab., Th. S. 2
	11:30. Math., T. Th. S. 3	1:30. Chem. Lab., T.
		W..... 2

SCHEME OF STUDIES—Continued.

Sophomore, First Semester 8:30. Math. or Sci., T. Th. S..... 3 9:30. Greek, T. W. Th. F. S..... 5 10:30. Ger. or Fr., M. W. F..... 3 10:30. Eng., T. Th. S... 3 11:30. Latin, M. T. Th. F..... 4	Sophomore, First Semester 8:30. Eng. Hist., M. W. 2 8:30. Math. or Sci., T. Th. S..... 3 9:30. Ger. or Fr., M. W. F..... 3 10:30. Eng., T. Th. S... 3 10:30. Gen. Hist., M. W. F..... 3 11:30. Latin, M. T. Th. F..... 4	Sophomore, First Semester 8:30. Math., T. Th. S. 3 8:30. Eng. Hist., M. W..... 2 9:30. Ger. or Fr., M. W. F..... 2 10:30. Phys., M. W..... 3 10:30. Eng., T. Th. S... 3 11:30. Mineral., M. T. Th. F..... 1 1:30. Phys. Lab., F... 4
Sophomore, Sec'd Semester 8:30. Ger. or Fr. or Physiol., M. W. F..... 3 9:30. Greek, M. T. W. Th. F. S..... 6 10:30. Eng., T. Th. S... 3 11:30. Latin, M. T. W. F. S..... 5	Sophomore, Sec'd Semester 8:30. Political Hist., M. W..... 2 9:30. Ger. or Fr., T. Th. S..... 3 10:30. Gen. Hist., M. W. F..... 3 10:30. Eng., T. Th. S... 3 11:30. Latin, M. T. W. F. S..... 5 2:00. Social Science, T. Th..... 2	Sophomore, Sec'd Semester 9:30. Ger. or Fr., T. Th. S..... 3 10:30. Phys., M. W. F.. 3 10:30. Eng., T. Th. S... 3 11:30. Geol., M. T. Th. F 4 11:30. Math. or Sci., M. W. F..... 3 1:30. Phys. Lab., W. S. 2
Junior, First Semester 8:30. Greek, T. Th. S. 3 9:30. Philosophy, M. W. F..... 3 10:30. Ger., M. W. F... 3 10:30. French, T. Th. S. 3 Elective 4	Junior, First Semester 9:30. Phil., M. W. F. 3 or 11:30. Econ., M. W. F. 3 10:30. Fr. or Ger., T. Th S..... 3 11:30. Eng., T. Th. S... 3 Elective 7	Junior, First Semester 9:30. Phil., M. W. F... 3 10:30. Fr. or Ger., T. Th. S..... 3 11:30. Astro., M. W. F. 3 Elective 7
Junior, Second Semester 8:30. Greek, T. Th. S... 3 9:30. Philosophy, M. W. F..... 3 10:30. Ger., M. W. F... 3 10:30. French, T. Th. S. 3 Elective 4	Junior, Second Semester 9:30. Phil., M. W. F... 3 or 11:30. Fin'ce M. W. F.. 3 10:30. Fr. or Ger., T. Th. S..... 3 11:30. Eng., T. Th. S... 3 Elective 7	Junior, Second Semester 9:30. Phil., M. W. F... 3 10:30. Fr. or Ger., T. Th. S..... 3 11:30. Astro., M. W. F.. 3 Elective 7
Senior, First Semester Elective 15	Senior, First Semester 11:30. Fr. or Ger., T. Th. S..... 3 Elective 12	Senior, First Semester Elective 15
Senior, Second Semester Elective 15	Senior, Second Semester Elective 15	Senior, Second Semester Elective 15

Notes on the Scheme of Studies.—1. Students in the A. B. and B. L. courses may elect in their Freshman year, four hours a week of any one of the following Sciences for which they are prepared: Physics, Chemistry, Geology, Mineralogy, Biology, Astronomy.

2. Students in the B. L. course may substitute for Analytical Geometry, in the first semester of their Sophomore year, three hours a week of any

one of the Sciences named above. The same permission is given to students in the B. S. course in the second semester of the Sophomore.

3. Students in the A. B. and B. L. courses that wish to continue the study of Mathematics throughout the Sophomore year may do so with the consent of the Faculty, by temporarily omitting some required study.

4. In any course, the time required for French and German may be divided by the student at his pleasure, provided he do not give to either of these languages less than two semesters.

5. Military Science and Tactics may be taken in addition to 18 hours a week of other subjects.

6. The figure after each study indicates the number of recitations or lectures or laboratory exercises each week.

7. Without consent of the Faculty, students are not allowed to take work in more than five subjects, unless the course is such as to require it. The subjects intended are such as English, Latin, French, Philosophy, Chemistry, etc.

ACADEMIC STUDIES.

English.

Professor ALLEN; Assistant Professors PENN and BELDEN.

1. English Composition, with selected readings in American Literature. Lectures. Text-book, exercises, and themes. Sections I and II, *T. Th. S.*, at 8:30; Sections III and IV, *M. F.*, at 8:30. Assistant Professors PENN and BELDEN. (Freshman.)
2. English Literature. *First Semester*, Chaucer to Milton; *Second*, Restoration to the present. Lectures. Parallel readings, and reports; essays on literary and historical subjects. *T. Th. S.*, at 10:30. Professor ALLEN and Assistant Professor BELDEN. (Sophomore.)
3. English Literature. Nineteenth Century. *First semester*, 1789-1830; *Second*, 1830-1890. Lectures. Readings, and weekly reports. *T. Th. S.*, at 10:30. Assistant Professor PENN. (Sophomore.)
Open also as a Junior Elective.
4. English Literature. Eighteenth Century; from Restoration to French Revolution. *First semester*, Dryden and Pope; *Second*, Swift, and the Novelists. Lectures. Readings, and reports. *W. F.*, at 3. Assistant Professor BELDEN. (Junior Elective.)
- 5a. History of the English Language. Lectures and text-book. *First semester*, *T. Th. S.*, at 11:30. Professor ALLEN. (Junior.)
- 5b. Study of Modern Prose Style, based upon master-pieces of representative authors. Essays, and reports. *Second semester*, *T. Th. S.*, at 11:30. Professor ALLEN. (Junior.)
6. English Literature. Shakspeare. *First semester*, Six selected plays; reading and interpretation; detailed study of style. *Second semester*, Complete works. Lectures. Weekly reports, and occasional essays. *T. Th. S.*, at 3. Assistant Professor PENN. (Senior Elective.)

The first half of the course is equally open to Juniors; the second half must be preceded by the first or its equivalent.

- 14b. English Literature. English Drama, from beginnings to Restoration (1250-1660). Lectures. Selected plays, and reports; occasional essays. *Second semester, T. Th. S., at 3.* Assistant Professor PENN.

(Senior Elective.)

Course 14b alternates with second half of course 6. It was not given in 1896-7.

- 15a. American Literature. Lectures. Selected readings, and reports. *Second semester, T. Th. S., at 3.* Assistant Professor BELDEN.

(Junior Elective.)

7. Anglo-Saxon. Prose and Poetry. *W. F., at 11:30.* Professor ALLEN.
(Senior Elective.)

8. Studies in Anglo-Saxon, based on Beowulf and the Wülker-Grein Bibliothek. *T. Th. S., at 3.* Professor ALLEN. (Graduate Elective.)

Course 7 or equivalent is required for admission to course 8.

- 9b. Higher Composition, and Principles of Versification. *Second semester, W. F., at 2.* Assistant Professor BELDEN. (Senior Elective.)

- 10b. Middle English. *Second semester, T. Th., at 8:30.* Professor ALLEN.
(Senior Elective.)

11. Gothic. Introduction to Germanic Philology, with special reference to English. Wulfila. Lectures. *M. W. F., at 3.* Assistant Professor PENN. (Graduate Elective.)

The second half of the year may be given to Old Saxon (Holland).

- 12a. The French Element in English. (Knowledge of Latin and French necessary.) *First semester, W. F., at 9:30.* Professor ALLEN.
(Senior Elective.)

- 12b. Principles of English Etymology. *Second semester, W. F., at 9:30.* Professor ALLEN. (Senior Elective.)

- 13b. Teachers' Course. *First semester.* Professor ALLEN.

Required: For B. L., 1, 2 (or 3), 5a and 5b; for B S. and A B., the same except 5a and 5b.

Of the elective courses, 6, 14b, 10b, are open also to Juniors; and 8, 11, are primarily for graduates.

A special medal, known as the "McAnally medal," is offered for the best essay, thesis, or poem by members of the Senior class, competing under certain rules laid down by the founder of the prize. Subject for 1898: "Eugene Field."

Latin.

Professor JONES; *Assistant Professor BURNAM; Acting Assistant Professor CATRON; Mr. DANIELLS.

The following courses are offered:

1. Sallust and Virgil, with sight reading. *T. W. Th. F. S., at 9:30.* Professor JONES, Acting Assistant Professor CATRON, Mr. DANIELLS.

(Freshman.)

Text-books: Herberman's Cataline; Greenough & Kittredge's Virgil; Arnold's Revised Latin Composition; Allen & Greenough's Latin Grammar; Guerber's Myths of Greece and Rome.

2. Horace and Livy. *First Semester, M. T. Th. F., at 11:30; Second Semester, M. T. W. F. S., at 11:30.* Acting Assistant Professor CATRON.

(Sophomore.)

Text-books: Smith & Greenough's Horace; Lord's Livy; Grammar and Composition.

3. Cicero and Tacitus; Minute study of syntax and some attention to Latin Philology. *W. F., at 8:30.* Acting Assistant Professor CATRON.

(Junior Elective.)

Text-books: Hopkins' Tacitus; Tyrrell's Cicero; Reid's Cicero.

4. Sight-reading. *T. Th., at 9:30.* Professor JONES.

(Junior and Senior Elective.)

5. Terence and Plautus. *W. F., at 10:30.* Professor JONES.

(Junior Elective.)

- 6a. Course for expectant Latin teachers. *First Semester, M., at 8:30.* Professor JONES.

7. Critical study of a selected author. *T. Th. S., at 10:30.* Professor JONES.

(Graduate Elective.)

8. History of the Latin Language. Sounds, inflections, syntax. *W. F., at 8:30.* Professor JONES.

(Graduate Elective.)

9. Cicero de Re Publica and de Legibus; Gajus' or Justinian's Institutes. Lectures. Recitations and reports. *M. T. S., at 8:30.* Assistant Professor BURNAM.

(Junior Elective.)

10. Roman Public Law. Lectures. Recitations, and reports. *W. Th. F., at 8:30.* Assistant Professor BURNAM.

(Senior and Graduate Elective.)

Must be preceded by course 9. [Will not be given in 1897-8.]

*Absent for session of 1896-7.

11. Latin Paleography. Books, the makers and materials, in Antiquity and the Middle Ages; abundant practice in reading facsimiles of manuscripts. *M. W.*, at 9:30. Assistant Professor BURNAM.

(Graduate Elective.)

Courses 9, 10 and 11 were not given in 1896-7.

Courses 1 and 2 are required for the A. B. and B. L. degrees; all others are elective. The Roman method of pronunciation only is permitted.

Greek.

Professor MANLY; Assistant Professor PICKARD.

1. Xenophon's Anabasis. *M. T. Th. S.*, at 10:30. Assistant Professor PICKARD. (Freshman.)
2. Homer, and Xenophon's Memorabilia. *First Semester*, Homer's Iliad, I-VI., *T. W. Th. F. S.*, at 9:30. *Second semester*, Xenophon's Memorabilia, *M. T. W. Th.*, at 9:30. (Sophomore.)
- 3b. Greek Literature. *Second Semester, F. S.*, at 9:30. (Sophomore.)
4. Euripides and Demosthenes. *T. Th. S.*, at 8:30. (Junior.)
5. Life of the Ancient Greeks. Assigned readings and reports. Lectures illustrated by maps, charts, photographs and stereopticon views. *M. W. F.*, at 2. Professor MANLY. (Elective.)
 Knowledge of the Greek Language, while very desirable, is not indispensable for this course.
6. Homer's Odyssey. Rapid reading, lectures and papers on Homeric Antiquities. *W. F.*, at 11:30. Professor MANLY. (Elective.)
7. New Testament Greek. *T. Th. S.*, at 3. Professor MANLY. (Elective.)
8. Teacher's Course. The work will be specially adapted to students expecting to teach. *Two hours a week, both semesters.* Professor MANLY. (Elective.)
- 9a. Political Institutions of the Greeks. *First semester, two hours a week.* Professor MANLY. (Elective.)
10. Seminary for advanced study. *Two hours a week.* Professor MANLY. (Elective.)

Courses 1, 2, 3b, 4 are required for the A. B. degree.

Classical Archæology.

Professor PICKARD.

The following courses are offered:

1. History of Greek Art. An introductory study of Assyrian and of Egyptian Art, followed by a special study of the development of Greek Architecture and Sculpture from the VII. Century B. C., to the I. Century A. D. *T. Th. S., at 3.*
2. Explanation of the masterpieces in the Museum of Casts. *One hour a week.*
Open to all students of the University who desire to become acquainted with the finest works of art in the museum.
3. History of Renaissance Painting. *First semester*, Painting of the Netherlands and of Germany; *Second semester*, Italian Painting. *M. W. F., at 3.*
- 4a. "Homeric Art" or Art of Primitive Greece. Lectures based on the latest excavations and publications. *First semester, one hour a week.*
- 5b. Introductory Study of Greek Vases and Vase Paintings; based on Rayet and Collignon's "La Céramique Grecque." *Second semester, one hour a week.*
6. Etruscan and Graeco-Roman Art. *Two hours a week.*
Study of Etruscan Art is based on Martha, "L' Art Etrusque."
Study of Graeco-Roman Art is carried down to Byzantine times.
7. Topography and Monuments of Athens; based on a careful study of Pausanias. *Two hours a week.*
- 8a. The Greek Theatre; based on the new work on the Greek Theatre by Dr. Wilhelm Doerpfeld, Secretary of the German Archæological Institute at Athens. *First semester, two hours a week.*
9. Roman Life. *One semester, two hours a week.*
A special study of the extant remains, particularly in Rome and Pompeii. No knowledge of Latin required.
10. Archæological Seminary. Interpretation of monuments and discussion of disputed points in the history of Greek art and Greek artists. *Two hours a week.*

All courses are elective. Course 7 alone requires a knowledge of Greek. Courses 7 and 10 are primarily Graduate electives.

Museum of Classical Archæology.

An excellent beginning has been made in equipping a laboratory for the study of Classical Archæology. For this purpose the third floor of the west wing of Academic Hall, a room 110x36 ft., is fitted up. It is now supplied

with models of temples, illustrating the three orders of Greek Architecture, and with fifty plaster casts of the most famous specimens of Greek and Roman Art. These are arranged chronologically, and with them are hung one hundred and fifty framed photographs of other works of classic art. Besides these, the Museum possesses some one thousand photographs, and a fine collection of lantern slides.

Romance Languages.

Professor WEEKS; Mr. BRANDON.

FRENCH.

1. Elementary course. French Prose and Composition. Grandgent's French Grammar, Rollin's Reader. Section I, *M. W. F.*, at 8:30; Section II, *T. Th. S.*, at 8:30. Professor WEEKS and Mr. BRANDON.

2. Modern Fiction and Plays. Composition, Sight-reading. *M. W. F.*, at 9:30. Professor WEEKS.

This course is meant for the second year's study in French. Much ground will be covered, and especial attention paid to pronunciation. Several of the books read are here mentioned: Some one of Erckmann; Chatrian's better stories; Daudet's *La Belle Nivernaise* (Flammarion edition); de Musset's *Pierre et Camille*; Me. Greville's *Dosia*; About's *Le Roi des Montagnes*; Sandeau's *Mademoiselle de la Seigliere*; Scribe's *La Bataille de Dames*.

3. General View of French Literature. Rapid Reading. *T. Th. S.*, at 9:30. Professor WEEKS. (Junior Elective.)

This course is meant for the third year's study. A great deal of ground is covered; much pronouncing is done, very little translation. The course is conducted partly in French. Students do outside reading, and hand in written work in French. The first semester is devoted to the 17th and 18th centuries. One or more plays of the great classical dramatists are read, together with several orations of Bossuet. In the 18th century two of Voltaire's plays and one of Beaumarchais' are read. The second semester is devoted to the 19th century. A story and a play by Hugo are read, and among other things the following works: de Vigny's *Le Cachet Rouge*; Merimee's *Colombo*; About's *Le Roi des Montagnes*; de Bornier's *La Fille de Roland*; Labiche's *Moi* (Allyn & Bacon's edition); Coppee's *On Rend l'Argent*, and his *Le Pater*, (Holt & Co.); a volume of de Musset's Poems and two of his Proverbs.

4. The Classical Period of French Literature. *T. Th.*, at 10:30. Professor WEEKS. (Senior Elective.)

During the first semester Pascal's *Lettres Provinciales* will be read, with lectures on Jansenism. An ability to understand spoken French is a requisite for this course. During the remainder of the year, some subject desired by the students may be taken up. Last year the beginnings of French lyric poetry were read in this way.

5. Old French. Constan's *Chrestomathie*, with lectures in French. The class will read the greater part of *Alliscans*, edition of Guessard. *M. F.*, at 10:30. Professor WEEKS. (Graduate Elective.)

This course is meant for Graduates. Occasionally a Senior who has taken with high credit the preceding work and who is making a specialty of Romance Languages, is allowed to elect this course, which can be pursued advantageously for two successive years.

6. Course in French Composition. Outside reading. *T. Th. S.*, at 2. Mr. BRANDON.

This course is open to Sophomores and Juniors who are prepared to enter a course conducted in French.

ITALIAN.

1. Beginning Course. *T. Th. S.*, at 11:30. Mr. BRANDON. (Junior Elective.)

This course for the present can be given only in alternate years. No composition work is done. Grandgent's Italian Grammar is used. As soon as possible students begin to pronounce aloud without translating.

SPANISH.

1. Beginning Course. *T. Th. S.*, at 10:30. Professor WEEKS. (Junior Elective.)

This course is parallel to the one in Italian, and the same methods are employed. The Grammar used is Knapp's.

PHONETICS.

- 1b. General Introduction to Philology. *Second semester, W. F.*, at 4. Professor WEEKS. (Graduate Elective.)

An effort is made in this course to get at the phenomena of speech sounds from a physiological standpoint.

Germanic Languages.

Professor HOFFMAN; Miss RIGGS.

The following courses are offered:

1. German. Section I, *M. W. F.*, at 8:30; Section II, *T. Th. S.*, at 8:30. Miss RIGGS. (Freshman.)

Text-books: Thomas's Practical Grammar, Van Daell's Reader, Storm's Immensee, Gerstäcker's "Germelshansen," Schiller's "Der Neffe als Onkel."

2. German. Section I, *M. W. F.*, at 9:30; Section II, *T. Th. S.*, at 9:30. Professor HOFFMAN. (Sophomore.)

Text-books: Doktor Wespe by Benedix, Lessing's Minna von Barnhelm, Emilia Galotti, Harris's Prose Composition, Syntax.

3. German. *T. Th. S., at 10:50.* Professor HOFFMAN. (Junior.)

Text-books: Goethe's Hermann und Dorothea, Egmont, Iphigenie, Von Klenze's German Lyrics, Buchheim's Prose Composition.

4. German. *T. Th. S., at 11:30.* Professor HOFFMAN. (Graduate Elective.)

Text-books: Schiller's Wallenstein (complete), Victor von Scheffel's Ekkehard, Buchheim's Prose Composition; original composition work.

- 5a. Middle High German. *First Semester, M. W. F., at 11:30.* Professor HOFFMAN. (Graduate Elective.)

Paul's Mittelhochdeutsche Grammatik; Wolfram von Escheubach. Lectures on the Literature of the M. H. German Period.

- 5b. Old High German. *Second Semester, M. W. F., at 3.* Professor HOFFMAN. (Graduate Elective.)

Braune's Althochdeutsche Grammatik and Althochdeutsches Lesebuch.

6. German Literature of the XVIII and XIX Centuries. *T. Th. S., at 3.* Professor HOFFMAN. (Graduate Elective.)

Courses 1, 2, 3 are required studies. Course 4 is open also to Seniors.

Course 1 is a Freshman study for B. L. and B. S. students, but Sophomore for A. B. students. Course 2 is a Sophomore study for B. L. and B. S. students, but Junior for A. B. students.

History.

Professor HICKS*; Acting Professor LOEB.

The following courses are offered:

1. General History. Sec. I, *M. W. F., at 10:30*; Sec. II, *at 11:30.* (Sophomore.)
- 2a. History of England. *First semester*; Sec. I, *M. W., at 8:30*; Sec. II, *M. W., at 2.* (Sophomore.)
- 3b. Political History of the United States. *Second semester*; Sec. I, *M. W., at 8:30*; Sec. II, *M. W., at 2.* (Sophomore.)
- 4a. Politics, Historical and Comparative. *First semester, T. Th. S., at 2.* (Elective.)
- 5b. Theory of Jurisprudence. *Second semester, T. Th. S., at 2.* (Elective.)

Course 5b should be preceded by course 4a.

6. Seminarium in History. *Two hours a week.* (Elective.)

Required: For B. L., courses 1, 2a, 3b; for B. S., course 2a.

Elective: All courses are elective.

Undergraduate and Graduate: Courses 3a, 5b.

Graduate: Course 6.

*Absent for session of 1896-7.

Political Economy.

Professor HICKS*; Acting Professor LOEB; Acting Assistant Professor HAMMOND.

The following courses are offered:

- 1b. Introduction to Social Science. *Second semester, T. Th., at 2.*
(Sophomore.)
2. Theory of Economics and Finance. *M. W. F., at 11:30.* (Elective.)
3. Problems in Economics. *T. W. Th. F. S., at 3.* (Elective.)
4. Modern Financial Systems. *T. Th. S., at 11:30.* (Elective.)
- 5a. Industrial and Financial History of Missouri. *T. Th., at 2.* (Elective.)
6. Seminarium. Two hours a week. (Elective.)

Required: For B. L., course 1b.

Elective: All courses are elective.

Graduate: Courses 3, 4, 5a, 6.

Philosophy.

Professor THILLY.

The following courses are offered:

1. Psychology and Logic. Sections I and II, *M. W. F., at 8:30 and 9:30;*
Section III, *T. Th. S., at 9:30.* (Junior.)
Required for A. B. and B. S. degrees. Text-books: James' Psychology, Briefer Course, and Jevons' Lessons in Logic.
2. Advanced Psychology. *M. W. F., at 10:30.* (Elective.)
Course 2 must be preceded by course 1. Text-books: James' Psychology, advanced course; Ladd's Psychology, descriptive and explanatory; Wundt's Human and Animal Psychology; Külpe's Psychology.
3. Ethics. *First semester;* Introduction to Ethics. Lectures and Recitations.
Second semester; A Study of the Works of Modern Moralists. Reports, discussions, and essays. *T. Th. S., at 2.* (Elective.)
4. History of Philosophy. Lectures, recitations, and private reading. *T. Th. S., at 10:30.* (Elective.)
Text-book: Weber's History of Philosophy.

*Absent for session of 1896-7.

5. Modern Criticism. A Study of the Development of the Critical Problem in Modern Times. *T. Th. S., at 8:30.* (Elective.)

Course 5 must be preceded by courses 1 and 4. Text-books: Locke's Essay concerning Human Understanding, Berkeley's Treatise on the Principles of Human Knowledge, Hume's Treatise on Human Nature, and Kant's Criticism of Pure Reason.

- 6a. Metaphysics. *First semester, T. Th. S., at 11:30.* (Elective.)

Text-book: Paulsen's Introduction to Philosophy.

Mathematics.

Professor TINDALL; Assistant Professors DEFOE and UPDEGRAFF.

- 1a. Trigonometry and Solid Geometry. *First semester, T. Th. S., at 11:30.*

Assistant Professors DEFOE and UPDEGRAFF. (Freshman.)

Texts: Bowser's Trigonometry, Chauvenet's Geometry.

- 1b. Analytic Geometry. *Second semester, T. Th. S., at 11:30.* Professor TINDALL and Assistant Professor DEFOE. (Freshman.)

Text: Loney's Co-ordinate Geometry.

2. Advanced Algebra. *M. F., at 11:30.* Assistant Professor DEFOE.

Text: Hall and Knight, revised by Sevenoak. (Freshman.)

3. Analytic Geometry and Calculus. *T. Th. S., at 8:30.* Professor TINDALL and Assistant Professor DEFOE. (Sophomore.)

Texts: Loney's Co-ordinate Geometry, Byerly's Differential Calculus.

4. Theory of Equations and Determinants. *M. W. F., at 9:30.* Assistant Professor DEFOE. (Junior Elective.)

Texts: Burnside and Panton's Theory of Equations, and Gordon's Determinants.

5. Analytic Mechanics. *M. W. F., at 9:30.* Professor TINDALL or Assistant Professor DEFOE. (Junior Elective.)

Text: Loney's or Routh's Statistics and Dynamics.

6. Integral Calculus. *T. Th. S., at 9:30.* Professor TINDALL.

Text: Byerly's Integral Calculus. (Junior Elective.)

- 7a. Solid Analytic Geometry. *First semester, M. W. F., at 8:30.* Assistant Professor DEFOE. (Senior Elective.)

Text: Chas. Smith's Solid Geometry.

- 7b. Plane Analytic Geometry. *Second semester, M. W. F., at 8:30.* Professor TINDALL. (Senior Elective.)

Text: Loney's or Salmon's Co-ordinate Geometry.

8. Differential Equations. *T. Th. S., at 10:30.* Professor TINDALL.
(Graduate Elective.)
Text: Johnson's Differential Equations.
9. Higher Plane Curves. *M. W. F., at 10:30.* Professor TINDALL or Assistant Professor DEFOE.
(Graduate Elective.)
Text: Salmon's Geometrie Analytique.
10. Modern Higher Algebra. *T. Th. S., at 8:30.* Professor TINDALL or Assistant Professor DEFOE.
(Graduate Elective.)
Text: Serret's Cours d'Algebre Superieure.
11. Theory of Functions. *T. Th. S., at 11:30.* Professor TINDALL.
(Graduate Elective.)
Texts: Klein's Functionentheorie or Picard's Traite d'Analyse.
12. Theory of the Potential Function. *M. W. F., at 10:30.* Professor TINDALL.
(Graduate Elective.)
Texts: Peirce's Newtonian Potential Function and Duhem's Electrite et Magnetisme.

Required: For B. L. and A. B., 1a, 1b; for B. S., 1a, 1b, 2, and the first half of 3; for the degree in Engineering, 1a, 1b, 2, 3, and 6.

Courses 7a, 7b, 8, and 12, are especially recommended to students of Engineering.

Of courses 4 and 5, and of courses 11 and 12, only one each will be given.

Astronomy.

Professor UPDEGRAFF.

1. Popular Astronomy. Lectures, recitations, and occasional night observations. Treatment non-mathematical. *T. Th. S., at 11:30.*
(Elective.)
Text: Newcomb's Popular Astronomy, Library Edition.
2. General Astronomy. Lectures, recitations, and occasional night observations. *M. W. F., at 11:30.* (Junior.)
Trigonometry required. Text: Young's General Astronomy.
- 3a. Practical Astronomy (For Seniors in Civil Engineering). Recitations, and practical work in the Observatory. *First semester, five hours a week.*
Text: Doolittle's Practical Astronomy.
- 3b. Geodesy and Least Squares (For Seniors in Civil Engineering). Recitations, and practical work in the field. *Second semester, four hours a week.*
Text: Gore's Geodesy.

4. Spherical and Practical Astronomy. Problems of Spherical Astronomy. Theory and practical use of instruments. *Three hours a week.*

(Junior Elective.)

Calculus required. Text: Chauvenet's Spherical and Practical Astronomy.

5. Spherical and Practical Astronomy. Continuation of Course 4. *Three hours a week.* (Senior Elective.)

6. Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

(Graduate Elective.)

A thorough course in Calculus and Analytic Geometry is required. Text: Watson's Theoretical Astronomy.

Required: For B. S., Course 2; for B. S. in C. E., Courses 3a and 3b.

The Laws Astronomical Medal :

An engraved medal, called the "S. S. Laws Astronomical Medal," is offered annually to that member of the graduating class who stands highest in Astronomy, and has at the same time attained a high average of general scholarship. An original thesis written on some astronomical subject, and showing capacity for scientific investigation, is required.

The Laws Observatory :

The Observatory, a building 84 feet long from east to west, and from 14 to 30 feet wide, stands on an elevated portion of the University campus. The equipment consists of a 7½-inch equatorial refracting telescope by Merz und Söhne, of Munich, a 2 1-10-inch transit instrument by Brunner, of Paris, an altitude and azimuth instrument of 2½ inches in aperture, sidereal and mean-time clocks, sidereal break-circuit chronometer, chronograph, sextant, micrometer, and a complete outfit of smaller instruments.

Both clocks and instruments are mounted on piers of solid masonry, isolated from the floors and walls of the buildings, and are provided with the usual electrical connections. The dome of the equatorial telescope is 18 feet in diameter, and a cone of 14 feet, in diameter, which revolves on balls, shelters the altitude and azimuth instrument. The transit-room has three slits in the walls and roof for observation, and contains the transit instrument, chronograph and sidereal clock.

There is in the Observatory a valuable collection of astronomical books and pamphlets, and several of the best astronomical periodicals are regularly received and kept on file.

In the year 1880, Dr. S. S. Laws, then President of the University, contributed largely from his private funds toward the improvement of the Observatory building and instruments. In recognition of his generosity, the Board of Curators named the Observatory in his honor and founded the Laws Astronomical Medal.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

1. Elements of Physics. Lectures, and recitations, *M. W.*, at 11:30; Laboratory, *S*, at 1:30. Mr. GRIFFITH. (First Year Agriculture.)

2. Elements of Physics. Lectures, and recitations, *M. F.*, at 11:30; Laboratory, *T. Th.*, at 1:30. Mr. GRIFFITH. (First Year Medical.)

In this course special emphasis will be given to those parts of the subject most useful in Medicine.

3. Lectures and recitations on the more important principles of Physics. *T. S*, at 11:30; Laboratory, *M. F.*, at 1:30. Mr. GRIFFITH. (Freshman.)

Elective in A. B. and B. L. courses. Recommended to those who wish to take a short course in Physics to prepare themselves to teach the subject in the High Schools. Teachers who have already had the text may elect the Laboratory alone.

4. General Physics. *First semester*: Lectures, and recitations, *M. W.*, at 10:30; Laboratory, *F.*, at 1:30. *Second Semester*: Lectures, and recitations, *M. W. F.*, at 10:30; Laboratory, *W. S.*, at 1:30. Professor LIPSCOMB. (Sophomore.)

Required in B. S. and in all Engineering courses; elective in A. B. and B. L. Texts: Carhart's University Physics; Laboratory, Nichols (Vol. 1).

- 5a. Special Laboratory work in Mechanics, Heat, and Light. *First semester*, *M. W. F.*, at 1:30. Professor LIPSCOMB or Mr. GRIFFITH. (Third Year Agriculture.)

- 6a. The Practical Application of Electricity in Medicine and Surgery. *First semester*, *T. Th. S.*, at 9:30. Professor LIPSCOMB. (Third Year Medical.)

Elective in all Academic courses. Text, Liebig & Rohe.

- 7a. The Theory of Heat. *First semester*, *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Junior Elective.)

Required of Seniors in E. E. and M. E. Text, Maxwell.

- 7b. The Theory of Light. *Second semester*, *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Junior Elective.)

The basis of the work in this course is Preston's Theory of Light.

- 8a. Experimental Work in Heat, Light and Electricity. *First semester*, *T. Th. S.*, at 1:30. Professor LIPSCOMB. (Senior Elective.)

- 8b. Mathematical Theory of Electricity and Magnetism. *Second semester*, *T. Th. S.* (Senior Elective.)

Courses 7a, 7b, 8a and 8b are open only to those students who have taken course 4 or its equivalent.

9. Laboratory. Advanced measurements and special investigations. *Two to five times a week.* (Graduate and Senior Elective.)

Open only to those who have had courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Instructor, Mr. DINSMOOR.

The following courses are offered:

1. Inorganic Chemistry. Experimental lectures, laboratory work, and recitations. Lectures, *M. W., at 9:30.* Laboratory work and recitations, *M. W., at 1:30.*
- 2b. Metallurgy. Lectures and recitations. *Second semester, three hours a week.*
3. Organic Chemistry. Lectures, laboratory work, and recitations. *Three hours a week.*
- 4a. Qualitative Chemical Analysis. Laboratory work, with lectures. *First semester, three hours a week.*
- 4b. Quantitative Chemical Analysis. Laboratory work. *Second semester, three hours a week.*
5. Advanced Laboratory Work. Inorganic and Organic. *Daily.*
- 6a. Organic Chemistry (Introductory Course). Lectures, laboratory work, and recitations. *First or second semester, three hours a week.*
- 7a. General Chemistry (for Medical Students). *First semester, T. W. F. S., at 1:30.*
- 8b. Organic Chemistry (for Medical Students). Lectures and recitations. *Second semester, three hours a week.*
- 9a. Toxicology. Lectures and recitations. *First semester, Th. S., at 11:30.*
- 10b. Chemical Theory. Lectures and recitations. *Second semester, three hours a week.*

For this course 1 and 6a should be taken.

- 11a. History of Chemistry. Lectures and recitations. *First semester, three hours a week.*

For this course 1 and 3, or 6a, should be taken.

- 12b. Physical Chemistry. Lectures, laboratory work, and recitations. *Second semester, three hours a week.*

Required for B. S., 1; for B. S. in C. E., M. E., and E. E., 1 and 2b; for B. Agr., 1; for M. D., 1, 7a, 8b and 9a.

Elective: All courses.

Geology and Mineralogy.

Emeritus Professor BROADHEAD; Mr. MARBUT.

The following courses are offered :

1. Physiographic Geology: Lectures. Recitations, Laboratory, and Field Study. *Four times a week.* Mr. MARBUT. (Undergraduate Elective.)
Open to all A. B. and L. B. Freshmen.
- 2a. Mineralogy and Crystallography. Recitations; Laboratory work. *First semester, M. T. Th. F., at 11:30.* Mr. MARBUT. (Sophomore.)
One semester in Chemistry and one in Physics are required.
- 2b. Elementary Geology. Lectures. Recitations; Field and Laboratory work. *Second semester, M. T. Th. F., at 11:30.* Emeritus Professor BROADHEAD and Mr. MARBUT. (Sophomore.)
- 3a. Historical Geology. Lectures. Recitations from text, and Laboratory work. *First semester, three times a week.* Emeritus Professor BROADHEAD. (Junior Elective.)
Open to students who have had course 2b, and courses in Elementary Botany and Zoology.
- 3b. Paleontology. Lectures. Laboratory, and Field work. *Second semester, three times a week.* Emeritus Professor BROADHEAD. (Junior Elective.)
Open to students who have had course 3a, or its equivalent in some other school.
- 4a. Meteorology. Recitations, and study of weather charts. *First semester, three times a week.* Mr. MARBUT. (Junior Elective.)
Open to all students who have had courses in Elementary Physics and Chemistry.
- 5b. Advanced Physiography. Advanced study in the evolution of land forms. Lectures. Laboratory and Field Work. *Second semester, three times a week.* Mr. MARBUT. (Junior or Senior Elective.)
Open to students who have had course 1 or course 2b.
6. Crystallography. Study of the Morphological and Physical characters of crystals. *Three times a week.* Mr. MARBUT. (Undergraduate Elective.)
This course is intended for those students who desire a more thorough knowledge of the subject than can be obtained in course 2a. A fair knowledge of Chemistry and Physics is required.
- 7b. Economic Geology. Lectures. Recitations, Field Work. *Second semester, T. Th. S., at 9:30.* Emeritus Professor BROADHEAD. (Junior Engineering.)
May be elected by academic students who are prepared for it.

- 8a. American Archæology. Discussion of mounds and mound-builders, and pre-historic American races. *Monday, at 3.* Emeritus Professor BROADHEAD. (Elective.)
- 9b. Conchology. *Second semester, Fridays.* Emeritus Professor BROADHEAD. (Elective.)
10. Advanced Paleontology. Lectures. Field Work, and investigation in Missouri Paleontology. *Three hours a week or more, at the pleasure of the student.* Emeritus Professor BROADHEAD.
(Senior and Graduate Elective.)
Open to all students who have had course 3b.
11. Petrography. Lectures. Laboratory work; Microscopic study of rocks. *Three times a week.* Mr. MARBUT. (Senior and Graduate Elective.)

Biology.

Professor AYERS; Mr. THOMPSON.

GENERAL BIOLOGY AND ZOOLOGY.

2. General Biology. Lectures and Laboratory. *Four times a week.*
(Freshman, and Undergraduate Elective.)
- 2a. Teacher's Course. In addition to the requirement in 2, all Normal students are required to devote one hour a week to the special study of methods of teaching, laboratory equipment, and the collection and preservation of materials.
8. Morphology of Animals. Lectures and Laboratory. *Four times a week.*
(Undergraduate Elective.)
20. Investigations in Animal Morphology. *Time to be arranged with the Instructor.* (Graduate Elective.)
For other courses in Animal Morphology see Announcement of the Medical Department.

ANIMAL PHYSIOLOGY.

Professor CONNAWAY.

1. Beginning Physiology. One lecture and two laboratory exercises a week. *First semester.* (Sophomore.)
For Academic, Normal and Agriculture students. Text: Martins' "The Human Body" (advanced course); Laboratory Manual: Foster and Langley's Practical Physiology.

1a. Teachers's Course. *First semester, one hour a week.*

This is auxiliary to Course 1, which should be taken concurrently. The purpose of this Course is to furnish instruction in methods of teaching Physiology, and to give the Normal students an opportunity of applying their knowledge. Each student is required to make special preparation upon some assigned topic, both as to the subject matter, and the methods of presenting it to school children of different ages. The laboratory demonstrations necessary to the proper presentation of the topic must be prepared by the student.

3. Advanced Physiology. The courses offered in the Medical Department are open to election by academic students who have sufficient training in histology, physics and chemistry. See announcement of Medical Department.

BOTANY.

Mr. THOMPSON.

The courses offered to Agricultural students are open to those who wish to elect this subject. See announcement of courses in the School of Agriculture.

BACTERIOLOGY.

Professor BOLTON.

The course offered for Medical students in Bacteriology is open to those who desire to take this study as an elective. See announcement of the Medical Department.

ENTOMOLOGY.

Professor STEDMAN.

The courses offered to Agricultural students are open to those who wish to elect this subject. See announcement of School of Agriculture.

APPLIED BOTANY.

Professor WHITTEN.

The courses offered to Agricultural students are open to those who wish to pursue this subject. See announcement of School of Agriculture.

The Museum of Biology:

Professor AYERS, Curator.

The biological collections consist, at present, of that part of the former collection saved from the fire, together with the biological portion of the Missouri exhibit at the World's Fair. These collections are housed in new fire-proof rooms, 46X100 feet, built especially for this purpose.

Catalogues of the Museum may be had on application.

Open on week days from 2 to 3 p. m.

Elocution.

Professor SCOTT.

The work of the first semester will embrace: Breathing for conscious voice support; phonetics applied to enunciation, stress, inflection, quality, and quantity; phrasing; melody, intonation, and cadence; movement and rhythmus; foundation theory and practice in bearing and gesture; analysis of short prose and poetic passages, for the establishment of voice correlation with thought and feeling.

Text-book: G. L. Raymond's Orator's Manual.

The work of the second semester will comprise studies from Shakespeare and other poets; studies in the reading of didactic, descriptive, narrative, and impassioned prose; studies in forensic oratory, with constant review of principles.

Juniors and Seniors in the Academic Department may take Elocution as an elective three hours a week for one year, and receive a credit therefor of one hour a week for the two semesters. This subject may be elected by students in other departments, but does not count toward a degree.

II. Normal Department.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Medieval History.

JOSEPH PHILIP BLANTON, A. M.,

Professor of Theory and Practice of Teaching.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, and Assistant Professor of Mathematics.

†**JOHN MILLER BURNAM, Ph. D.,**

Assistant Professor of Latin Language and Literature.

†**FREDERICK CHARLES HICKS, B. A., Ph. D.,**

Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,

Professor of Classical Archaeology, and Assistant Professor of Greek.

†Absent for session of 1896-7.

FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B., Ph. D.,
Acting Professor of History and Political Economy.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M.,
Professor of Romance Languages.

MATTHEW B. HAMMOND, Ph. B., M. L.,
Acting Assistant Professor of Political Economy.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

WILLIAM VAN ALLEN CATRON, A. M.,
Acting Assistant Professor of Latin Language and Literature.

SILAS DINSMOOR, A. B.,
Instructor in Chemistry.

ARTHUR HARRINGTON PLACE, C. E.,
Instructor in Drawing.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Instructor in Geology and Mineralogy.

CHARLES HENRY THOMPSON, B. S.,
Instructor in Botany.

EDGAR E. BRANDON, A. B.,
Teaching Fellow in Romance Languages.

FRANCIS POTTER DANIELLS, A. B.,
Teaching Fellow in Latin.

INEZ RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

Theory and Practice of Teaching.

Professor BLANTON.

Courses of Instruction :

There are two distinct courses, one Elementary and one Advanced.

I. ELEMENTARY COURSE.

The Elementary Course is intended to prepare teachers for the public schools of the State. Students who complete the work may receive a State Certificate which authorizes them to teach in the public schools of Missouri for a period of two years from the date of the certificate.

Candidates for this certificate must meet the following requirements:

1. They must, when they enter upon the course, be free from all entrance requirements.
2. They must take or must have taken at least twelve (12) hours Academic work from the Freshman class of one of the courses outlined on pages 54-55 of this catalogue.
3. They must, during the Freshman or a later year, take three (3) hours a week of Elementary Pedagogics below outlined, and two (2) hours a week of Drawing in the College of Agriculture and Mechanic Arts, throughout the year, in place of five (5) hours a week of the regular Academic work required in the year and the course in which they belong. The omitted Academic work must, however, be later completed by all candidates for Academic degrees.

The following are the required studies in the Elementary Course in Pedagogics:

- 1a. History of Educational Theories. Lectures. Parallel readings and Essays. *First Semester, T. Th. S., at 11:30.*
- 1b. (1) Elements of Pedagogy; (2) Organization and Management of Schools. Lectures. *Second Semester, T. Th. S., at 11:30.*

For the required course in Drawing see Index under "Drawing."

II. ADVANCED COURSE.

The Advanced Course is intended to prepare students as teachers in the Secondary Schools of the State. This course leads to the Normal diploma, which entitles the holder to teach for life in any public school in Missouri. This diploma is given to graduates of the Academic department who have met the following conditions:

1. In the Junior year, the application of three (3) hours in each semester to the work in Pedagogics—the time to be taken out of the free electives. This work counts toward any Academic degree.

2. In the Senior year, the application of three (3) hours each semester to the work in Pedagogics. This work must be done in addition to the fifteen (15) hours required for Academic Work in that year.

3. The completion of two (2) Teachers' courses of not more than three (3) hours a week for one semester. These courses are offered as electives to Normal students by the various Academic Professors, but do not count towards any Academic degree. The object is to show the best method of instruction in any given subject, the work done by the class being used as a basis for illustration. Students who have met these conditions successfully may receive a Normal diploma and a life certificate to teach in Missouri at the same time that they receive an Academic degree.

The following courses are offered:

1. History of Education. Lectures. Essays, Reports and Discussions. *M. W. F., at 10:30.* (Junior.)

The course should be preceded by course 1 (General History) page 64, and course 1b (Introduction to Social Science), page 65.

Special importance is attached to the study of the educational classics. Davidson's *The Education of the Greek People*, Davidson's *Aristotle and the Ancient Educational Ideals*, Plato's *Republic*, Clarke's *The Education of Children at Rome*, Quintillian's *Institutes of Oratory*, Montaigne's *Essays on Pedantry*, Anger, and on the Education of Children, Mulcaster's *Positions*, Ascham's *Schoolmaster*, Bacon's *Advancement of Learning*, Comenius' *School of Infancy*, Milton's *Tractate on Education*, Locke's *Thoughts on Education*, Pestalozzi's *Leonard and Gertrude*, Spencer's *Education*, and Thring's *Theory and Practice of Teaching*, are read, wholly or in part, and discussed with reference to the development of educational ideals, methods and institutions.

2. Institutes of Education. Lectures. Recitations, and occasional essays. *T. Th. S., at 3.* (Senior.)

This course must be preceded or accompanied by courses 1 and 3, in Philosophy, page 65. Texts: Rein's *Outlines of Pedagogy*, McMurray's *General Method*, Lange's *Apperception*, and Rosenkranz's *Philosophy of Education*. Bi-weekly reports of observations of work in the Columbia Public Schools, and lesson plans on subjects assigned, will also be required.

Theory and Practice of Teaching

3a. School Systems of Europe. Lectures. Readings and reports. *First semester, M. W. P., at an hour to be selected.* (Junior Elective.)

Texts: Reports of U. S. Commissioner of Education, Paulsen and Hart's Universities of Germany, Klemm's European Schools, and others.

Courses 1, 2, are required for the Normal diploma and Life certificate.
Course 3a is elective.

Degree of Bachelor of Pedagogics:

The degree of Bachelor of Pedagogics (B. P.) will be conferred on any graduate of the Academic department of the University holding the Normal diploma and life certificate, upon application to the Board of Curators after two years of successful teaching, and upon the presentation to the Faculty of a thesis. This is to be known as the thesis for the Bachelorship in Pedagogy, and must be submitted by the candidate not later than May 1 preceding the Commencement at which the conferment of the degree is sought. The thesis must discuss a subject belonging to one of the courses of study in Pedagogy, and must show original treatment or give evidence of independent research. The number of words in the thesis must not be less than five nor more than ten thousand.

Special Courses for Teachers:

Special courses of instruction are annually offered by Professors in the University to teachers of the State free of all charges, beginning April 1, and continuing two months. Due announcement of the courses to be offered in 1896, beginning April 1, will be made during the second semester by circular to teachers.

Hereafter the University will maintain regularly a summer school, particularly for instruction in laboratory methods of teaching science. It is open to all teachers in the State, but is designed especially for those who teach or wish to teach in High Schools. These courses will begin May 31, and end August 21, 1897. Circulars giving full details may be had upon application by letter to the University. See Appendix I.

No fees are charged for any of these special courses for teachers.

III. Department of Law.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ALEXANDER MARTIN, LL. D.,
Professor of Law, and Dean of the Faculty.

JAMES AULL YANTIS, LL. B.,
Professor of Law.

JOHN DAVISON LAWSON, LL. D.,
Professor of Law.

ANDREW WALKER MCALESTER, M. D.,
Lecturer on Medical Jurisprudence.

Hon. GEORGE B. MACFARLANE, Judge of the Supreme Court of Missouri,
Non-resident Lecturer on Criminal Procedure.

Hon. ELMER B. ADAMS, Judge of the U. S. District Court for the Eastern District of Missouri,
Non-resident Lecturer on the Law of Wills and Administration.

Hon. JAMES A. SEDDON, LL. B., Ex-Judge of Circuit Court of St. Louis,
Non-resident Lecturer on Commercial Law.

Hon. FRANCIS M. BLACK, of Kansas City, Ex-Chief Justice of Missouri,
Non-Resident Lecturer on Equity Jurisprudence.

Hon. JAMES B. GANTT, Presiding Judge of Division No. 2 of the Supreme Court of Missouri,
Non-Resident Lecturer on Corporations.

Requirements for Admission :

Junior Class.—For admission to the Junior Class, no examination in law is imposed. Candidates are advised to complete, if they can, a full academic or collegiate course.

It is the purpose of the University to raise gradually the standard of Academic requirements necessary for admission to the Department of Law. Accordingly in the fall of 1897 the requirements for admittance will cover

the subjects embraced in the first year of a course of study embodying the recommendations of the University to its approved high schools (see pages 45-50); in the fall of 1898 the subjects embraced in two years of such a course; in the fall of 1899 the subjects embraced in three years of such a course.

In the fall of 1900 and thereafter the requirements for admittance to the Department of Law will be fully equivalent to those demanded for admittance to the Academic Department. (See pages 41-48.)

An applicant presenting to the "Committee on Entrance by Diploma" a certificate from the Principal of any Approved high school or academy showing that in any course of study in which said school has been approved by the University the applicant has finished with passing grades the first year, will be admitted without examination in the fall of 1897; upon presentation of such a certificate showing that he has finished two years of such a course he will be admitted without examination in the fall of 1898; in a similar way upon showing that he has finished three years of such a course he may be admitted without examination in the fall of 1899. In the fall of 1900 he must present a diploma from an Approved high school or academy or pass entrance examinations similar to those for admission to the Academic Department.

In lieu of such diploma or certificate the applicant will be required in the fall of 1897 to pass satisfactory examinations on all of the following subjects: History, English, Mathematics, and Latin.

1. In History, the applicant will be examined on the equivalent of the work given in Myer's General History, or in lieu thereof on the equivalent of the work given in Ransome's "A Short History of England."

2. In English, the examination will be on Grammar, Rhetoric, and Composition, of the grade of Longman's School Grammar.

3. In Mathematics, the examination will be on Algebra, and the applicant should have a knowledge of the subject equivalent to that found in "Wentworth's Shorter Course in Algebra" up to quadratic equations.

4. The examination in Latin must show a thorough mastery of Collar and Daniell's First Latin Book, or of Gildersleeve's Latin Primer, or of some other Beginner's Book fully equivalent to these.

No student will be admitted who has failed in the examination on any of these subjects.

In the fall of 1898, the examinations will cover the ground in various subjects, as here indicated:

1. In History. The equivalent of Myer's "General History."

2. In English. Grammar, Rhetoric, Composition, and Literature, in amount and of a grade equivalent to Longman's School Grammar, Keeler & Davis' Studies in English Composition, and two-thirds of the masterpieces in English literature named in the English Academic entrance requirements for 1898 (pages 41-42).

3. In Mathematics. Examination on either two years of Algebra or one year of Algebra and one year of Plane Geometry. One year's work in Algebra will be the equivalent of Hall & Knight's Elementary Algebra up to Quadratic Equations; two years' work, the same text through the Binomial Theorem. One years' work in Plane Geometry will be the completion of Wentworth's Plane Geometry, or its equivalent.

4. In Latin. Three books of Cæsar's Gallic War, and fifteen lessons in Arnold's Prose Composition. For the Cæsar, Nepos may be substituted.

5. In Science. One years' work with laboratory practice in any one of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

6. In Greek. One year's work—the equivalent of White's Beginners' Greek Book, and some facility in reading Xenophon's Anabasis. For this year of Greek a year of History or of Science will be equally accepted. This second year of History will be in English and United States History, the equivalent respectively of Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." The second year in Science will be in a second of the three sciences named above (Biology, Physics, Chemistry), with laboratory practice.

No student will be admitted who has failed in the examination on any of these subjects.

All examinations will be conducted in writing.

If unknown to the Faculty, the candidate must bring satisfactory testimonials of good character.

Candidates may be admitted to the Junior class at any time during the session, by fulfilling the requirements for entrance, and by passing an examination upon the work accomplished by the class at the date of the examination.

Senior Class.—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, is possessed of the academic education and moral character required for admission to the Junior class, and has passed a satisfactory examination upon the studies of the Junior year. Certificates of admission to the bar will not relieve the applicants from examination for admission to the Senior class. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the session, and the applicant will be admitted to the class as a candidate for a degree, upon condition that he pass at the time appointed a satisfactory examination on those branches. No one is permitted to pursue in one year the full course of two years. He must be qualified in the first year's course before admittance is granted to the second year's course.

Graduate Class.—No one will be admitted to this class as a candidate for the degree of LL. M., unless he holds the degree of LL. B. from the law department of the University, or is a graduate of some other law school whose course of instruction is equivalent to that offered in this University.

Admission to the Senior or Graduate class will not be permitted after two weeks from the beginning of the year.

Special Course.—The same qualifications as to education and character required of candidates for the Junior class, will be exacted of students admitted to special courses.

COURSES OF STUDY.

The principal object of the courses of study adopted in the school is to qualify its graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the school to cram its students for the purpose of qualifying them to pass the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedial procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to the bar. As the degree of LL. B. from this Department entitles the graduate to admission to the bar of the State of Missouri, the Faculty cannot overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is a great similarity in the general statute and judiciary law of the Western, Northwestern and Southwestern states, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said states.

Undergraduate Course:

The undergraduate course covers a term of two years. There are two classes—Junior and Senior. Instruction is given daily to these classes, in the form of lectures, recitations and examinations upon the text-books recommended, and upon leading cases furnished by the Faculty. Every Tuesday they participate in the exercises of a Moot court.

I. The Junior class receives instruction on the following subjects:

1. Law of Torts, Elements of Law of Real Property; by Professor YANTIS.
2. Contracts, Agency, Personal Property (including Sales); by Professor LAWSON, and Special Lecturers.
3. Negotiable Instruments, Parliamentary Law; by the DEAN, and Special Lecturers.

II. The Senior class receives instruction on the following subjects:

1. Real Property, Evidence, Criminal Law; by Professor YANTIS, and Special Lecturers.

2. Equity Jurisprudence, Pleading and Practice at common law, in equity and under the code, Corporations, Constitutional Law; by the DEAN, and Special Lecturers.
3. Insurance, International Law; by Professor LAWSON.
4. Law of Wills and Administration; by Special Lecturers.

The text-books recommended are as follows:

For the Junior Year—

On Elements of Law of Real Property.....	Blackstone and Kent
On Torts.....	Hale, Pollock, Cooley
On Contracts.....	Lawson, Bishop
On Agency.....	Story, Meecham
On Sales.....	Tiedeman, Brown, Benjamin, Tiffany
On Bailments.....	Lawson
On Personal Property.....	Smith, Lawson's Cases
On Domestic Relations.....	Brown, Schouler
On Negotiable Instruments.....	Norton, Bigelow
On Parliamentary Law.....	Roberts, Cushing

For the Senior Year—

On Real Property.....	Tiedeman, Williams, Washburn
On Wills.....	Chaplin
On Evidence.....	Greenleaf, Best, Starkie
On Criminal Law.....	Bishop
On Insurance.....	Richards, May
On International Law.....	Lawrence, Glenn
On Equity Jurisprudence.....	Bispham, Merwin, Fetter
On Pleading and Practice.....	McKelvey, Bliss, Heard, Desty
On Constitutional Law.....	Black, Cooley
On Corporations.....	Taylor, Thompson, Murfree
On Partnership.....	Pollock

Graduate Course :

This course is open to graduates of the Law department and to those of other law schools that have completed an equivalent course of study.

The object of the Graduate course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures and recitations on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student in this course is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students the instruction in this course.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland's Jurisprudence; Pattison's Forms.

Special Course :

Students who do not wish to take any of the full courses, and who are not candidates for any degree, will be permitted to take an elective course, and pursue branches of instruction given in the Department, the exercises of which do not conflict with one another. They will be classed as special students, and will receive from the Faculty certificates of the time spent in the study of the law and of the work therein accomplished.

METHODS OF INSTRUCTION.

In the Department of Law instruction is given by means of Lectures, Recitations, Examinations, and the study of Treatises and Cases.

The first benefit inuring to the student who enters a good law school is to learn how to study law, as distinguished from merely reading it. A student in an attorney's office is too apt to continue, in his study of law, the superficial habit acquired by him in the perusal of newspapers, literary periodicals and novels.

On entering the school he is instructed in the proper method of reading treatises and reports of cases, of examining questions of law, of taking notes of lectures, and of handling digests, dictionaries and compilations of the law.

The Law Faculty is satisfied from experience that the highest results cannot be reached by lectures alone, however clear and thorough they may be; but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subject upon which he has received instruction, he should be required to stand frequent examinations on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the Professor for his investigation. In this manner, it is believed, he will receive the full advantages of the lecture and recitation methods of instruction as

applied to the study of treatises, and to the examination and analysis of cases. In addition to lectures and recitations, the classes are divided into sections and subjected to quizzes conducted by members of the class, appointed by the Professors for that purpose. The members are also required to explain and develop in the lecture-room subjects assigned to them by the Professors. A combination of these different methods has, in the opinion of the Faculty, produced the most satisfactory results.

Moot Court:

Every Tuesday a Moot Court is held, in which all Law students participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and when the cause is supposed to be in the Supreme Court, in addition to the pleading, papers are prepared necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, ruling upon the admission or exclusion of evidence, motions for new trial, in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Faculty presides at the trial, determining all preliminary and incidental motions. A member of the Senior class or Graduate class is called to sit as special judge in each cause, who, the next week, gives his opinion in writing, subject to appeal to the member of the Faculty present at the trial. Practical instruction in pleading is given by requiring half of the members of a class to draft pleadings in causes assigned to them, and to submit them to the other half. The pleadings thus drafted are discussed and settled in the presence of the Professor giving instruction on that subject.

DEGREES AND HONORS.**Degrees :**

Members of the Senior class who have successfully passed the examinations of the Senior year will be entitled to receive the degree of Bachelor of Laws. Members of the graduate class who have successfully passed the prescribed examinations will be entitled to receive the degree of Master of Laws.

All who receive from this University the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all the courts of the State of Missouri.

Honors :

Whenever a candidate for graduation attains a high degree of excellence in his class-work the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction, and the words *cum laude* or *magna cum laude* will be incorporated in the diploma. In determining the required degree of excellence the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.

The members of the Senior class are all invited to write essays upon some subject in law, assigned to them by the Faculty before January 1 of each year. The essays so written are submitted to a committee of judges charged with the duty of designating the best two of said essays. The names of the authors are placed on the Commencement program. Students not writing essays as aforesaid, and not excused therefrom by the Law Faculty, shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation.

Prizes:

A prize of \$50, provided in the endowment fund of the Hon. James S. Rollins, is awarded each year at the Commencement to the member of the Junior Law class, who by superior scholarship and moral conduct, has shown himself entitled thereto.

The Edward Thompson Company, Law Publishers of Northport, New York, give annually to the author of the best thesis submitted by members of the Senior Law Class a prize consisting of a complete set of their famous American and English Encyclopædia of Law. This set consists of thirty-one volumes, and is valued at \$100.

ADVANTAGES.

The advantages now offered by the University of Missouri for instruction in the science and practice of common law and equity, as prevailing in the United States, have been greatly increased within the last few years.

Accommodations:

Since the destruction of the main building of the University by fire, January 9, 1892, the Curators have erected a large, commodious structure for the use of the Law department. It contains a spacious library-room, two large lecture-rooms, moot court and club-rooms, quiz-rooms, and offices for the Professors.

Libraries:

The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing every year, the Thirty-eighth General Assembly of the State having in 1896 appropriated five thousand dollars to that end, which has been expended in the purchase of treatises and reports. All the decisions of the American courts are received as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and Professors. Members of the Law department have access also to the general library of the University.

Academic Facilities:

The connection of the Law department with the University enables the law student, without additional charge, to take instruction in other de-

partments of the University, provided it does not interfere with his legal studies. Some members of every class have found it convenient to pursue such studies as Latin, French, Logic, English, Military Science, Political Economy, History, Stenography, Elocution, etc.

University Societies :

Members of the Law department are eligible to membership in the two literary societies of long standing in the University known as the "Athenæan" and the "Union Literary." They are also eligible to membership in the "Bliss Lyceum," to which members of the Law department alone are admitted.

These societies are nurseries of oratory, debate and parliamentary law.

GENERAL INFORMATION.

The Department of Law is open alike to men and women.

For enrollment of students in the Department, see the Index.

The Law department opens with the other departments of the University, on the second Tuesday in September, and closes on the first Wednesday in June of each year.

Examinations for admission will be held on the second Tuesday in September, at 9 o'clock a. m.

Examinations for admission may be accorded at other times, upon request, to suit the convenience of applicants.

For information as to the tuition charges and expenses of the Law department, see page 22.

For further information and catalogues, address

ALEXANDER MARTIN, Dean,
Columbia, Mo.

IV. Department of Medicine.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President.

ANDREW WALKER MCALESTER, A. M., M. D.,

Dean of the Faculty, and Professor of Surgery and Obstetrics.

WOODSON MOSS, M. D.,

Professor of Anatomy and the Practice of Medicine, and Secretary to the Faculty.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology (Human and Comparative).

GEORGE WASHINGTON CUTLER, M. D.,

Professor of Physical Culture.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

B. MEADE BOLTON, M. D.,

Professor of Bacteriology and Pathology.

SILAS DINSMORE, A. B.,

Instructor in Chemistry.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

G. R. HIGHSMITH, M. D.,

Lecturer on Abdominal Surgery.

Requirements for Admission:

It is the purpose of the University to raise gradually the standard of educational requirements for admission to the Department of Medicine. For the session 1897-8, the requirements will be as follows:

(a) Creditable certificates of good moral standing. (b) Diplomas of graduation from a literary or scientific College or High School, or, in lieu thereof, an examination in the following branches: English Grammar and Composition, Arithmetic, Algebra as far as quadratics, United States History, Geography, Latin (equivalent to one year in a high school), and one year's work with laboratory practice in one of these sciences: Biology, Physics, Chemistry—Biology preferred.

For the session of 1898-99 the requirements will be two years of a high school course embodying the recommendations of the University to its Approved Schools; for 1899-1900 three years of such a course; and in the fall of 1900 and thereafter, the requirements for admission to the Department of Medicine will be fully equivalent to those demanded for admission to the Academic department. (See pages 41-43.)

It is important for such applicants as are able to do so to present to the President of the University a certificate from the Principal of an Approved High School or Academy showing that in a course of study in which said school has been approved by the University the applicant has finished with passing grades the first year, or the first and second years, or the first, second and third years. While such documents may not supersede the entrance examination, they are valuable aids to the examiners. Such documents should always be brought by those entitled to them, and presented promptly to the President of the University.

COURSE OF INSTRUCTION.*First Year.***First semester:**

Chemistry 4
Physics 4
Anatomy (Osteology)..... 3
Comparative Anatomy (Viscera). 3
Normal Histology..... 4

Second semester:

Chemistry..... 4
Physics..... 4
Anatomy and Dissection..... 4
Physiology..... 6

*Second Year.***First semester:**

Anatomy 2
Physiology..... 4
Chemistry..... 4
Bacteriology..... 6
Embryology..... 2

Second semester:

Anatomy..... 2
Dissection..... 2
Chemistry..... 3
Practice of Medicine..... 3
Pathology..... 3
Materia Medica..... 2
Obstetrics.. 3

Third Year.

First semester:	Second semester:
Practice of Medicine..... 3	Practice of Medicine..... 3
Surgery..... 3	Surgery 3
Obstetrics..... 2	Gynecology..... 2
Surgical Anatomy..... 2	Therapeutics 2
Therapeutics 2	Electro-Therapeutics..... 3
Toxicology..... 2	Clinical Pathology..... 2

The figures indicate the number of hours a week in the lecture-room. Two and a half hours in the laboratory are reckoned as only one hour in the lecture-room.

PLAN OF INSTRUCTION.

Instruction is given by lectures, recitations, clinical teaching, and laboratory work.

The length of the session, nine months, renders it practicable to distribute the different branches among the teachers in a satisfactory manner, and in their natural order and succession. The student is thoroughly drilled each day by examinations upon the lectures of the previous day, and by recitations from text-books.

By this method of teaching, it is believed that the process of cramming—a deleterious practice, too prevalent in the general system of medical education—is avoided; and much will be done to elevate the standard of medical education, and to exalt the dignity of the profession.

The students are taught the use of the microscope, in both pathological and physiological studies. The methods of bacteriological, physiological and histological investigation are taught by practical work in the laboratories.

Medical students in their first year may take, without additional fee, any work offered in the Academic Department and in the Schools of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but the number of hours shall not exceed 18 a week, and such work shall not count toward the degree of M. D. unless it is included in the regular Medical course. Academic students, on the other hand, may take Anatomy and Physiology in the first year of the Medical course, preparatory to entering on the full Medical course after graduating in Arts or Science. (See page 53.) Such students are admitted to the Second Year's Medical class.

LABORATORIES.

The following courses are required:

Chemistry:

1. Elementary Organic Chemistry. Lectures, *M. W.*, at 9:30; Laboratory, *T. W.*, at 1:30. (First Year.)
2. Qualitative and Urinary Analysis. Lectures, with laboratory exercises at option of instructor. *T. W. F. S.*, at 2. (Second Year.)

3. Sanitary and Physiological Chemistry. *Three hours a week.*

Topics (in Sanitary Chemistry).—*Air*: Respiration, vitiated air and ventilation; systems of heating and of ventilation; dust, infection, contagion, germ theory of disease; inoculation and immunity; disinfection; septic means and measures. *Water*: Potable water, hard and soft; impurities in it from service pipes or sewage contamination; public water supplies and systems of sewerage and canalization; mineral and other waters; drinking, bathing, climatic and water cures. *Soil*: Micro-organism in it; ground air, ground water and public health. *Food*: Milk, fresh and condensed; bovine tuberculosis and milk supply; milk substitutes and infants' and invalids' foods; emulsified, digested and peptonized food; bread, meat, fat, sugar; preservation and adulteration of foods; poisonous foods; dietaries, specific and general; digestion, natural and aids to it, condiments, tonics, stimulants; food and muscular energy.

Topics (in Physiological Chemistry).—*Physical Exercise*: Mental strain; grief, pleasure, worry, diversion; slums and dirt in their relation to health and morals; environment and social influences reacting upon life of individual and nation; private and public sanitary measures; health boards, communal, State and National, and the scope of their work.

4. Toxicology. *Two hours a week.*

(Third Year.)

Physics:

2. Elementary Physics. Lectures and recitations, *M. F., at 11:30.* Laboratory, *T. Th., at 1:30.* (First Year.)

- 6a. The Practical Application of Electricity in Medicine and Surgery. *First semester, T. Th. S., at 9:30.* (Third Year.)

Text: Liebig and Rohe.

Biology:

- 1a. Comparative Anatomy of Vertebrates (Macroscopic and Microscopic). Lectures and Laboratory. *First semester, seven hours a week.*

Wiedersheim's Comparative Anatomy of Vertebrates, Gray's Anatomy, Gorham & Tower's Anatomy of the Cat, Schaefer's Histology.

2. *Comparative Embryology of Vertebrates. Lectures, *one hour a week;* Laboratory, *three hours a week.*

Minot's Human Embryology, Marshall's Vertebrate Embryology.

3. *Comparative Neurology of Vertebrates. Lectures and Laboratory.

(Elective.)

Courses 1 and 2 are required for admission to this course. Texts: Edinger's Anatomy of the Central Nervous system, and Obersteiner's Central Nervous System.

Physiology:

- 1b. Lectures and Laboratory. *Second semester, six times a week.*

(First Year.)

The topics considered are: The blood, circulation, muscle, nerve, digestion, respiration, excretion, etc. The course must be

*Will not be given in 1897-98.

preceded by one semester's work each in Comparative Anatomy, Histology, Physics and Chemistry. Text: Foster's Physiology; Collateral reading—Landois, Waller. Laboratory Manual—Stirling's Practical Physiology.

This course is elective for Academic students.

2a. Lectures and Laboratory (a continuation of course 1b). *First Semester, four times a week.* (Second Year.)

Topics—Metabolism, nutrition, nervous system, and reproduction. Course 1b must precede. Text: Foster's Physiology; Collateral reading—advanced texts and journals.

Laboratory and Equipment.—The laboratory occupies rooms 2 and 3 in the north wing of the Museum Building, is well lighted, and is furnished with new laboratory tables suited to the work.

The laboratory is supplied with glassware, chemicals, microscope, a microtome, and a fair equipment of apparatus for graphic and other work, as induction coils, batteries and keys, rheocord, moist chamber, kymograph, student's drums, pendulum myograph, manometers, Marey's tambours, sphygmograph, cardiograph, stethograph, electric time-markers, contact clock, metronomes, tuning fork and electro magnet, rheonom haemacytometer, haemometer, micrometers, artificial eye phakoscope, perimeter, stromuhr, oncometer, electrometer, saccharimeter, ureometer, etc.

Bacteriology :

This course consists of lectures and recitations, and about eight weeks of daily practice in the cultivation of bacteria upon artificial media, and the bacteriological examination of water, air, soil, dairy products, and of any pathological material that can be obtained. Text-book: Abbott's Principles of Bacteriology.

Pathology :

This course consists of lectures and recitations, and demonstrations of mounted preparations. Opportunity is also afforded the student to harden, embed, cut, stain, and mount preparations. Text: Ziegler's General and Special Pathological Anatomy. The course is elective for Academic students.

Anatomy :

Facilities are afforded the students for the thorough study of Anatomy. Provision is made for a supply of subjects amply sufficient for the number of students. The dissecting rooms are large and well ventilated, and are open during the whole winter season, where, under the guidance of a demonstrator, the student, by dissecting, acquires a practical knowledge of the human body in all parts.

The Physiological, Bacteriological and Pathological laboratories are located in the Biological building. The Professors of Surgery, Obstetrics,

and Practice of Medicine, have rooms on the first floor of the Academic Hall. The old medical building is now the Anatomical Hall.

Clinics :

The number and variety of Medical and Surgical Clinics are ample for purposes of instruction.

DEGREES AND CERTIFICATES.

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred. The degree of "*M. D. cum laude*" is given to all graduates in the Medical course who have the degree of A. B., B. S., or B. L.

At the close of each year, the following certificate is issued to students completing the work of that year:

"The Medical department of the University of the State of Missouri hereby grants this certificate to——— as an evidence that he has attended the———year's course, and passed the final examinations."

Upon the certificates the subjects and grades are recorded. No certificate of any character will be issued during the progress of the session.

REQUIREMENTS FOR GRADUATION.

1. The candidate must have completed the course prescribed and passed a satisfactory examination thereon.
2. He must be twenty-one years of age, and must exhibit evidence satisfactory to the Faculty of possessing a good moral character.
3. His last course of lectures must have been attended in this Department.
4. He must have been regular in attendance upon lectures and recitations and in laboratories.
5. Every candidate must appear before the members of the Faculty for examination in the various branches in medicine, at the time appointed for such examinations.
6. Conformity to the general laws established by the Curators and the Faculty for the government of the University, faithful discharge of duties and regular attendance upon lectures and laboratories, are required of all students.

For tuition charges, fees, etc., see "Expenses," page 22.

For further information, address

A. W. MCALESTER, M. D.,
Dean of Medical Faculty.

For catalogues, address

WOODSON MOSS, M. D.,
Secretary Medical Faculty, Columbia, Mo.

V. Department of Military Science and Tactics.

WALTER ALONZO THURSTON, Lieut. 16th U. S. Infantry,

Professor of Military Science and Tactics, and Commandant of Cadets.

Requirements for Admission :

No cadet will be received who is under 16 or over 25 years of age, or who is less than five feet one inch in height, or who is in any way physically disqualified for military service.

All male students of the University not physically disqualified, who come within the limits of age and height, will be allowed to enroll themselves as voluntary cadets, but only State cadets will be matriculated in the Academic department of the University without payment of the tuition fees, and provided with the tailor-made uniform without expense to themselves. A copy of the regulations for the government of cadets will be given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the Commandant for duty *before* September 25th of each year. They should report by September 12th, if possible.

Cadet Officers :

Battalion Staff and Non-commissioned Staff.

Cadet Major.....	C. M. Barnes
Cadet First Lieutenant and Adjutant.....	G. H. English
Cadet First Lieutenant and Quartermaster.....	B. Munday
Cadet Sergeant Major.....	R. H. Switzler
Cadet Quartermaster Sergeant.....	L. L. Perrine

Company A.

Cadet Captain.....	H. H. Lotter
Cadet First Lieutenant.....	L. Hegnauer
Cadet Second Lieutenant.....	O. H. Turner
Cadet First Sergeant.....	R. S. Edmunds

Company B.

Cadet Captain	A. Gwinn
Cadet First Lieutenant.....	C. M. Jackson
Cadet Second Lieutenant	W. H. Turner
Cadet First Sergeant.....	G. E. Huggins

Company C.

Cadet Captain.....	J. D. McNeely
Cadet First Lieutenant.....	A. M. Hitch
Cadet Second Lieutenant.....	H. K. Hansen
Cadet First Sergeant.....	B. U. Pippin

Band.

Band Leader.....	F. Pannell (civilian
Drum Major.....	J. C. Fast
Chief Musician.....	J. W. Welch

Those cadets are appointed to office who show ready obedience, zeal and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

General Supplies :

One hundred and fifty Springfield cadet rifles of the latest model, one Gatling gun, cal. 45, with full equipment, two 3-inch rifled field-guns, with carriages and implements, and a suitable amount of ammunition and target materials, are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc. The University supplies instruments and instruction for the band.

Uniforms:

Cadets wear but one style of uniform, known as the undress or fatigue uniform. Uniforms must be worn at all military exercises, and may, with permission of commandant, be worn on special occasions. Tailor-made uniforms are supplied to volunteer cadets at a contract price. The State furnishes uniforms to regularly appointed cadets free of cost (usually one entire uniform and one extra pair of trousers every year to each appointed cadet, depending upon amount of appropriation by Legislature).

COURSE OF INSTRUCTION.**FIRST YEAR.**

Practical instruction in the schools of the Soldier, Company and Battalion (Infantry), and Extended order.

Practical instruction in rifle-firing, 100, 200, and 300 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of guard mounting, dress parade, inspection, review, muster and extended order.

Recitations in guard duty, rifle-firing and cadet regulations.

SECOND YEAR.

Practical instruction in the Schools of the Company and Battalion, and in Extended Order.

Practical instruction in the service of field-guns (foot battery), with mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200 and 300 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations, School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted.

Recitations in the elements of Field Fortifications.

Lectures are given on Army Organization, the Army of the U. S., the regulations of the U. S. army, courts-martial and military law, and the customs of war, street fighting, etc. The commandant of cadets has power to change and arrange the course of study.

Certificate of Proficiency :

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in Military Science and Tactics, but it is the rule now adopted in the University that the certificate will be issued to every cadet, State or volunteer, who takes the entire course and attains a grade of at least 70 per cent in *every examination* given during the two years in Military Science and Tactics.

Appointment of State Cadets :

The following extracts from the Militia law of the State of Missouri, enacted by the Thirty-eighth General Assembly, revised by the Thirty-ninth General Assembly, and now in force, will be of interest to those who desire to receive the appointment of cadet :

Be it enacted by the General Assembly of the State of Missouri, as follows :

SECTION 1. The military department of the University of the State of Missouri as organized under section 1225, Revised Statutes of the United States; and section 8741, Revised Statutes of Missouri, 1889, is created the Missouri State Military School.

SECTION 2. The corps of cadets of the Missouri State Military School shall consist of appointees of Senators and Representatives, and such students as may voluntarily enter such school. All appointments under this section shall be for the term of two years. Each Senator and Representative of the General Assembly of Missouri shall have power to appoint a cadet from his district by the first day of August of each year: Provided, that if there shall be no application for such cadetship in any such district by the first day of August, in any such year, then such appointment may be made from any other district in this State; and provided, that in case of death, resignation or expulsion from the University of any cadet from such

district, the Senator or Representative thereof may fill such vacancy at any time. All appointees under this section shall pass the required examination for admission to the University.

SECTION 3. Cadets receiving instructions, as provided in preceding section, shall be matriculated in all Academic departments, and in the College of Agriculture and Mechanic Arts of the University, free from tuition and other fees.

SECTION 4. The corps of cadets, as provided in the preceding sections, shall have the military organization prescribed for the National Guard of the State and reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri.

SECTION 5. The military government and discipline of the cadets shall be prescribed by regulations prepared by the Faculty of the University and approved by the Governor of the State. The officers of the corps of cadets shall be appointed and commissioned by the Governor of the State, upon the recommendations of the Faculty of the University, and shall have the powers conferred by said regulations.

SECTION 6. Cadets shall be individually responsible for all State property issued directly to them; and shall constitute a guard for the safe-keeping and preservation of all University property.

Approved April 11, 1895.

Regulations :

Cadet regulations prescribe that military drills, etc., shall be held at least three hours a week, one of which shall be for theoretical and two for practical instruction. The regulations also require, whenever the means of the University permit it, an annual encampment of from eight to ten days, during which the instruction is entirely military and practical. Here the cadets are put through all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300 and 400 yards, and perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed in the two years' course. The expenses of the encampment are borne by the University.

Enrollment :

During the present session 136 cadets have received instruction in Military Science and Tactics.

State Commissions:

Senate Bill No. 66, 39th General Assembly, provides as follows:

Article III. Section 33. Every graduate of any college in the State of Missouri, in which military instruction is regularly given by an officer of the United State army, detailed for that purpose, who shall have received military instruction during a course of four years, shall be entitled to a

commission as brevet second lieutenant of the National Guard of Missouri, subject to such physical examination as to ability as the commander-in-chief may from time to time prescribe: Provided, that application for such commission be made within one year after graduation from such college, and that such applicant shall be at the time a citizen of the State of Missouri.

VI. College of Agriculture and Mechanic Arts.

FACULTY.

Except those of the President and the Deans, names are printed in order of appointment. Names marked with a (*) are names of members of the Faculty of the School of Mines and Metallurgy, at Rolla.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of the Faculty, and Director of the Experiment Station.

*WALTER B. RICHARDS, M. A.,
Director of School of Mines and Metallurgy, and Professor of Mathematics.

PAUL SCHWEITZER, Ph. D.,
Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,
Professor of Mathematics.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology, and Curator of Geological Museum.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

CHRISTIAN WILLIAM MARX, B. E.,
Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.



JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Veterinary Surgery.

*ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

†FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of Political Economy.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture.

*COURTNEY DEKALB,
Professor of Mining and Metallurgy.

*ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),
Professor of Military Science and Tactics.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLAKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station

*EUGENE THOMAS ALLEN, A. B., Ph. D.,
Professor of Chemistry and Metallurgy

†Absent for session of 1896-7.

RAYMOND WEEKS, A. M.,
Professor of Romance Languages.

MATTHEW B. HAMMOND, Ph. B., M. L.,
Acting Assistant Professor of Political Economy.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor of Electrical Engineering.

B. MEADE BOLTON, M. D.,
Professor of Bacteriology and Pathology.

††T. E. WHITE, D. V. S.,
State Veterinarian, and Lecturer on Veterinary Surgery.

*PAUL JULIUS WILKINS, B. S.,
Instructor in Academic Department.

SILAS DINSMOOR, A. B.,
Instructor in Chemistry.

*THOMAS LEWIS RUBEY, A. M.,
Instructor in Academic Department, and Librarian.

ARTHUR HARRINGTON PLACE, C. E.,
Instructor in Drawing.

WILLIAM WALTER GRIFFTH, B. S.,
Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Instructor in Geology.

MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.

*GEORGE EDWARD MILLER, B. S.,
Instructor in Shop-work and Drawing.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

CHARLES HENRY THOMPSON, B. S.,
Instructor in Botany.

††In the service of the State Board of Agriculture.

EDGAR E. BRANDON, A. B.,
Teaching Fellow in Romance Languages.

INEZ RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

EDWARD BEAUFORD CAUTHORN, B. S.,
Teaching Fellow in Mathematics.

Historical Statement:

This College had its origin in the beneficence of National, State and local governments. Its location, objects and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

Its leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life. (Act of Congress, 1862, Sec. 4.)

There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct Department of the University of the State of Missouri. (R. S. of Missouri, Sec. 8738.)

To effect the said leading objects of the College, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets and apparatus, and to all lectures and instructions of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as are the students of any other Department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established by Congress, the State University is hereby required by law to make the necessary provision for carrying out the plan so established in connection with the institution. (R. S., Sec. 8741, p. 2017.)

The Agricultural and Mechanical College, and the School of Mines and Metallurgy herein provided for, shall have each a separate and distinct Faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other Colleges and Departments of the University. (R. S. of Missouri, Sec. 8742.)

In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University the county of Boone shall donate not less than \$30,000 in cash, to be used in erecting such buildings and making such improvements as may be needed for such College, and also for a Mechanical College in connection with the State Uni-

versity, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College. (R. S. of Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of \$90,000 for the erection of a building and the purchase of lands for an experiment farm, and this College was permanently located at Columbia as a Department of the University, and the School of Mines and Metallurgy was located at Rolla, in Phelps county. The latter is under the same general control as the College of Agriculture and Mechanic Arts.

Endowment of the College:

The support of the College is derived from—

1. The proceeds of the sales of the public lands donated to Missouri by the act of Congress of July 2, 1862. This State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and sixteen thousand seven hundred and sixty acres, yielding three hundred and twenty-two thousand dollars. This sum is invested in State certificates of indebtedness, at five per cent, and yields sixteen thousand two hundred dollars. Of this amount one-fourth, or four thousand and fifty dollars, is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The act of Congress of March 2, 1887, known as the "Hatch bill," which appropriates \$15,000 annually to the College of Agriculture for the maintenance of an Experiment Station. The object of this Station is to conduct experiments in various lines of work connected with agriculture. By the acts of Congress making the above appropriations, the expenditures are expressly restricted for the purposes of instruction, illustration and original scientific investigations in agriculture, and no part can be used for the erection or repair of buildings; such facilities are to be provided by the State of Missouri. The annual appropriations are yearly to be increased under act of Congress of August 30, 1890. The first appropriation of \$15,000, for the years 1889-90, is increased each year \$1000, and this is to continue until it reaches \$25,000, which shall remain an annual appropriation. Of this amount, one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in agriculture and mechanic arts, and one-fourth of the remainder to the School of Mines and Metallurgy, at Rolla. The College Farm itself cost originally \$60,000.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and scientific investigation.

The College is divided into four schools, with a fifth department, the Experiment Station, as follows:

A.—The School of Agriculture.

B.—The School of Mechanic Arts.

C.—The School of Engineering.

D.—The School of Mines and Metallurgy (at Rolla).

E.—The Experiment Station.

A. SCHOOL OF AGRICULTURE.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President

HENRY JACKSON WATERS, B. A. S.,

Dean of the Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D.,

Professor of Agricultural Chemistry.

CHRISTIAN WILLIAM MARX, B. E.,

Superintendent of Mechanic Arts.

JOHN CHARLES WHITTEN, B. S.,

Professor of Horticulture.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Veterinary Science.

FREDERICK BLAKMAR MUMFORD, M. S.,

Professor of Agriculture, and Curator of the Agricultural Museum.

JOHN MOORE STEDMAN, B. Sc.,

Professor of Entomology, and Entomologist to the Experiment Station.

***T. E. WHITE, D. V. S.,**

State Veterinarian, and Lecturer on Veterinary Surgery.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

*In the service of the State Board of Agriculture.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

†FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of Political Economy.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B., Ph. D.,

Acting Professor of Political Economy.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

WALTER ALONZO THURSTON, (Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

MATTHEW B. HAMMOND, Ph. B., M. L.,

Acting Assistant Professor of Political Economy.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

B. MEADE BOLTON, M. D.,

Professor of Bacteriology and Pathology.

SILAS DINSMORE, A. B.,

Instructor in Chemistry.

ARTHUR HARRINGTON PLACE, C. E.,

Instructor in Drawing.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Instructor in Geology.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

†Absent for the session of 1896-7.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

CHARLES HENRY THOMPSON, B. S.,

Instructor in Botany.

EDWARD BEAUFORD CAUTHORN, B. S.,

Teaching Fellow in Mathematics.

Requirements for Admission :

Applicants for admission to the Freshman class must be not less than sixteen years of age, and must have completed the "public school" course of the State. They must submit to the "Committee on Entrance by Diploma" satisfactory evidence of having completed the public school course; or in lieu of such evidence must pass satisfactory examinations in writing on each of the following subjects: English, Arithmetic, Geography (Descriptive and Political), and History of the United States. The examination will cover the ground embraced in the text-books adopted by the State for the common schools—namely, Ray's Practical Arithmetic, the Hyde series of language lessons, Butler's Geography, and Barnes' History of the United States. As a part of the English examination, the applicant will be expected to write a composition of not less than two hundred words.

Applicants for admission to advanced classes must furthermore pass examinations in all the studies previously pursued by the class which they propose to enter. If they have pursued such studies in any of the High Schools of the State approved by the Faculty, or in any other institutions of similar rank, they may receive credit therefor upon presenting to the "Committee on Entrance by Diploma" a certificate from the proper officers of such institutions.

For the dates of examinations for admission, see the calendar, p. 111, and page 44. For board and other expenses, see page 22.

COURSES OF INSTRUCTION.

I. A TWELVE WEEKS' WINTER COURSE IN AGRICULTURE AND DAIRYING.

This course is designed to meet the wants of a large number of young men who cannot afford the time or the money necessary for a regular college course in agriculture, and yet desire a better preparation for their life work than can be acquired on the farm.

To suit the convenience of farmers the course is given in the winter. It is open to all over 16 years of age, and no entrance examination or special

preparation is required. Any intelligent person with a common school education will be able to pursue the course with profit. An entrance fee of \$5 covers all college expenses.

It is the aim to give the student the largest amount of thoroughly practical information about farming, dairying, gardening, fruit-growing, veterinary science, carpentry and blacksmithing, possible in the twelve weeks allotted to the course, and, at the same time, to instruct him in the elements of chemistry, geology, entomology and botany as applied to agriculture and horticulture. The instruction is imparted by means of lectures, and practical illustrations on the farm, in the barn, in the greenhouse, the laboratories, and machine shops of the College.

The course consists of 229 lectures and exercises, divided as follows:

Agriculture, 75; Horticulture, 40; Dairying, 20; Agricultural Chemistry, 30; Economic Entomology, 10; Veterinary Science, 24; Carpentry and Blacksmithing, ten exercises of two and one-half hours each; Book-keeping and Farm Accounts, six exercises of two and one-half hours each; Butter and Cheese Making, 14 exercises of two and one-half hours each.

In addition to the course outlined, a number of special lectures are given by practical men who have been especially successful in particular branches of farming, fruit or vegetable growing, dairying, stock feeding, or stock breeding. During the winter of 1897 the following gentlemen delivered lectures in this course: Hon. J. R. Rippey, Secretary State Board of Agriculture, Columbia, two lectures on "The Missouri Road Horse;" John Patterson, President State Dairymen's Association, Kirksville, Mo., four lectures on "Missouri as a Dairy State."

II. SHORT WINTER COURSE IN HORTICULTURE.

With a view to aiding in the development of the Horticultural interests of the State by the dissemination of correct information concerning the best modern methods in the management of nurseries and orchards and in the growing of small fruits, flowers, and vegetables on a commercial scale, and by instruction in the application of the sciences underlying these arts, a short winter course in Horticulture running parallel with the short course in Agriculture, is offered. This course is open to all persons over sixteen years of age, and no entrance examination is required. An entrance fee of \$5 covers all college charges.

The course consists of 267 lectures and exercises, as follows: Horticulture, 108 (including Nursery Work, 24 lectures and 12 afternoons at practice in the nursery and grafting shops; Orcharding and Small Fruit Growing, 24 lectures, and 12 afternoons in the orchards and vineyards; Market Gardening, 24 lectures and 12 afternoons spent in propagating vegetables, etc.); Landscape Gardening, 10 lectures; Fungous diseases and Fungicides, 20 lectures; Entomology, 60 lectures; Botany, 16 lectures; Manures, 10 lectures; Drainage, 5 lectures; Sanitary Science, 10 lectures; Book-keeping, 6 exer-

cises of two and one-half hours each; Carpentry and Blacksmithing, 18 exercises of two and one-half hours each; Steam Heating and Steam Fitting, 4 lectures.

The special lecturers in this course were Hon. N. F. Murray, Vice-President State Horticultural Society, Oregon, Mo., 24 lectures and 12 practical exercises on Nursery Work; Hon. L. A. Goodman, Secretary State Horticultural Society, Westport, Missouri, 24 lectures and 12 practical exercises on Orcharding and Small Fruit Growing; Frank Ambs, St. Louis, 24 lectures and 12 practical exercises on Market Gardening and Hot-bed Methods.

These short winter courses will begin Tuesday, January 3rd, 1898, and will be continued daily, except Sunday, until March 27, 1898. Full details will be given in a special circular which will be ready for distribution in October, 1897, and will be sent free to all applicants.

III. A TWO YEARS' COURSE.

The course embraces the first two years of the regular Four Years' Course, and aims to give the student the most comprehensive knowledge of the laws underlying the best modern practice in Agriculture, Horticulture, etc., as well as to develop the highest skill in Mechanical Drawing, Carpentry, and Blacksmithing, that is possible in the time.

In addition to the mental discipline afforded by a study of these useful arts and sciences, the student is instructed in English, Mathematics, etc., with the view of broadening his mind and better fitting him for his duties as a citizen.

It is the purpose of the course to educate the student back to the farm instead of away from it, and to give him such knowledge as will be most useful in the practice of his profession.

The requirements for admission are the same as for the Four Years' Course.

Students completing this course will be granted a certificate.

IV. A FOUR YEARS' COURSE.

This course, a continuation of the Two Years' Course, is more scientific, but no less practical.

It has been recast in order to adapt it as far as possible to present requirements in both science and practice. Its object is to give young men a thorough education at the same time that they are carefully instructed in the relations that the sciences bear to the various branches of agriculture; to give the mental training that is indispensable to success and to the discharge of the highest duties of citizenship, as well as the scientific and technical training and knowledge requisite for becoming efficient workers in agricultural affairs, whether as practical farmers, teachers, or investigators. It aims to impart a thorough and comprehensive knowledge of the

principles underlying the business of farming according to modern methods. Practice is combined with theory, whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations. Increased teaching force and equipment have been provided for the work, and the opportunities offered young men were never so satisfactory as at the present time.

Students completing this course will be entitled to a diploma, conferring upon them the degree of Bachelor of Agriculture (B. Agr).

SCHEME OF STUDIES.

TWO-YEAR AND FOUR-YEAR COURSES.

First Year.

First semester.		Second semester.		
8:30.	Algebra and Geometry, T. W. Th. F. S.....	5	8:30. Algebra and Geomtry, T. W. Th. F. S.....	5
8:30.	*Commercial Course, M.....	1	8:30. *Commercial Course, M.....	1
9:30.	Agriculture, T. Th. S.....	3	9:30. Agriculture, T. Th. S.....	3
9:30.	English, M. W. F.....	3	9:30. English, M. W. F.....	3
10:30-12:30.	*Shop work, T. Th. S...	3	10:30-12:30. *Shop work, T. Th. S...	3
11:30.	Physics, M. W.....	2	11:30. Physics, M. W.....	2
1:30.	*Drawing, M. W.....	2	1:30. *Drawing, M. W.....	2
1:30.	*Laboratory, Physics, S.....	1	1:30. *Laboratory, Physics, S.	1
4:00.	Military Science (optional)..		4:00. Military Science (optional)..	

Second Year.

First semester.			Second semester.		
8:30.	Agriculture, M. W.....	2	8:30.	Horticulture, M. W.....	2
9:30.	English, T. Th. F. S.....	4	8:30.	*Horticulture Laboratory, F. 1	1
9:30.	Chemistry, M. W.....	2	8:30.	Animal Physiology, T. Th. S. 3	3
10:30.	Algebra and Geometry, T. W.		9:30.	Systematic Botany, T. Th. S. 3	3
	Th. F. S.....	5	9:30.	Chemistry, M. W.....	2
10:30.	*Stock Judging, M.....	1	10:30.	Algebra and Geomtry, T. Th.	
1:30.	*Chemical Lab., T. W.....	2		S.....	3
1:30.	*Shop work, M. S.....	2	10:30-12:30.	*Drawing, M. W.....	2
1:30.	*Drawing, Th. F.....	2	1:30.	*Shop work, M. F.....	2
4:00.	Military Science (optional)..		1:30.	*Chemical Lab., T. W.....	2
			4:00.	Military Science (optional)..	

Third Year.

First semester.			Second semester.		
8:30.	Horticulture, T. Th. S.....	3	8:30.	Forestry, T. Th.	2
8:30.	Veterinary Science, M. W. F.	3	8:30.	Veterinary Science, W. S.....	2
9:30.	Agricultural Chemistry, T. Th. S.....	3	9:30.	Agricultural Chemistry, T. Th. S.	3
10:30.	Vegetable Physiology, T. Th. S.....	3	10:30.	Vegetable Physiology, T. Th. S.....	3
1:30.	*Laboratory, Physics, M. W. F.....	3	10:30.	Climatology, F.....	1
1:30.	*Veterinary Clinics, Th.....	1	10:30.	Landscape Gardening, M. W.	2
	Elective.....	3		Elective.....	5

Fourth Year.

First semester.		Second semester.	
8:30.	Agriculture, T. Th. S..... 3	8:30.	Agriculture, T. Th. S..... 3
8:30.	Entomology, M. W. F..... 3	10:30.	Geology, T. W. F..... 3
11:30.	Economics, M. W. F..... 3	11:30.	Economics, M. W. F..... 3
11:30.	Bacteriology, T. Th..... 2	11:30.	Bacteriology, T. Th..... 2
	Elective..... 6		Elective..... 6

In the case of all the subjects starred [*] in the above table, no preparation is required, hence two and one-half times the number of hours given above are spent in the Shop, in the Drawing and the Commercial rooms, and in all Laboratory work.

Elective Work :

On reaching their third year, students in the School of Agriculture are required to elect one of the following groups of subjects: (a) Agriculture and Entomology; (b) Agriculture and Chemistry; (c) Botany and Entomology; (d) Horticulture and Botany; (e) Horticulture and Entomology; (f) Dairying and Chemistry; (g) Animal Husbandry and Veterinary Science; (h) English, French, or German. At least two hours each must be given to these electives during the four semesters of the third and fourth years, except when the heads of departments, by an exchange, arrange for the student to take all four hours of a subject in one semester. The student's other elective work may be chosen from the general list of electives offered in this College.

Thesis :

As a requisite for graduation, each candidate must present an acceptable thesis, based on the results of original research. The subject must be announced to the Dean with the approval of the head of the department within which it lies not later than the beginning of the second semester of the senior year. The completed thesis must be submitted not later than the second Saturday before Commencement day.

V. A TWO YEARS' GRADUATE COURSE.

This course is designed to give graduates of this College and of other Colleges of similar character such professional training as agriculturists, horticulturists, entomologists, agricultural chemists, as will fit them to teach one of these subjects in Agricultural Colleges, and do work along one of these lines in Experiment Stations.

Students who complete this course, and present a creditable thesis evincing capacity for original research and power of independent thought, will receive the degree of Master of Agriculture (M. Agr.).

Agriculture.

Professor MUMFORD.

The instruction in this department is thoroughly practical, and is intended to give a knowledge of the application of the natural sciences to the complex operations of agriculture. Lectures and recitations are supplemented by practical demonstrations on the farm. In the class-room the student becomes familiar with the best rations, and in the barns feeds the rations, and determines their practical value. The student in dairying goes through the whole process of making butter, repeating the work until he becomes familiar with it. The study of live-stock is based upon an examination of a large number of animals, so that the student begins the subject with a knowledge of the best types for various purposes.

1a. The Soil. *First semester, T. Th. S., at 9:30.* Dean WATERS.

(First Year.)

A study of the origin, formation, distribution, and classification of soils with reference to their agricultural value; the conditions of fertility and the circumstances that influence it; indications of fertility, barren and exhausted soils; improvement of soils; physical properties of soils, including their relations to air, water and heat; capillarity, diffusion and solution, as related to soil texture; farm drainage, including methods of construction, irrigation, tillage, plowing, subsoiling, harrowing, etc.

1b. Principles of Manures and Manuring. *Second semester, T. Th. S., at 9:30.*

Dean WATERS.

(First Year.)

Constituents of Plants, sources and specific action of the various elements of plant food; crops and materials used as fertilizers; methods of farming in relation to the conservation of fertility.

Farm Crops.—Plant breeding; variation, selection, self and cross fertilization; practical methods for increasing the yield of crops; conditions of germination and plant growth; rotation of crops; planting, growing, harvesting and storing crops. The results of experiments at the Stations are used in discussing the best methods of culture. The Missouri Experiment Station offers excellent opportunities for the illustration of this work.

2a. Animal Husbandry. *First semester, M. W., at 8:30; M., at 10:30.* Pro-

fessor MUMFORD.

(Second Year.)

This work begins with a careful study of the types of domestic animals. The score card is the basis in judging beef and dairy cattle, draft and light horses, mutton and wool sheep, swine and poultry. After the student has become familiar with the most approved types, he studies the principles and methods of successful breeding, heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading, influence of a previous impregnation, controlling sex, etc.

- 3a. Agricultural Engineering. *First semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

Construction of barns, stables and other shelters; plans for buildings silos, fences, etc. Road building is considered with special reference to country roads. Some attention is given to the mechanics of farm implements and machines. For this purpose a new self-registering dynamometer has been provided. There is also a model of a horse arranged for determining by experiments, the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc.; and also an appliance for measuring the resistance to attractive force of incline and obstruction.

- 3b. Stock Feeding. *Second semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

The Laws of animal nutrition; composition of the animal body; fodders the source of nutrients; digestion, resorption, circulation; respiration and excretion; formation of muscle, flesh and fat; composition and digestibility as determining the value of feeding stuffs; their preparation and use; feeding for fat, for milk, for wool, for work and for growth. A portion of the time is devoted to practicum, in which the student is required to compound rations and feed them, carefully recording results.

- 4b. Agriculture. *Second semester.* Dean WATERS. (Short Winter Course.)

Twenty-five lectures on manures and their application and on stock feeding—composition and digestibility of fodders; steaming, cooking and grinding foods, and feeding for growth, fat, milk, wool or labor. (See special circular of Short Winter Course.)

- 5b. Agriculture. *Second semester.* Professor MUMFORD.

(Short Winter Course.)

Sixty lectures on farm equipment; the properties and uses of construction materials; building barns, stables, shelters, silos and other farm structures; farm crops, tillage rotation, cultivation, harvesting, and storing; breeds and breeding; stock judging; scoring animals to determine the best types for beef, milk, mutton, wool, etc. This work is all performed at the farm barns, and students acquire considerable proficiency in judging stock. (See special circular of Short Winter Course.)

- 6b. Dairying. *Second semester.* Mr. ———. (Short Winter Course.)

Selection, breeding, and feeding of dairy cows; modern methods of butter and cheese making. Fifty hours of practical work in the dairy building are devoted to separating and testing milk, ripening cream, churning, working, salting, coloring, and packing butter for market. (See special circular of Short Winter Course.)

- 7a. Judging Live Stock. *First semester.* Professor MUMFORD. (Elective.)

Advanced work with the score card, and a study of breed characteristics. The college farm, well equipped with typical specimens of the leading breeds of live stock, offers excellent opportunities for this work.

7b. Experiments in Agriculture. *Second Semester.* Professor MUMFORD.

(Elective.)

The work consists of lectures on methods of Experiment Station work and critical studies of bulletins. The student is required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. He is also required to plan and conduct an original experiment, using the results obtained as the basis for a thesis.

8b. Dairying. *Second semester.* Professor MUMFORD.

(Elective.)

Breeding and improvement of the herd; management and equipment of the farm dairy. One-half of the student's time is devoted to practical work in the College dairy, which is fully equipped.

Courses 1a, 1b, and 2a are required for the certificate in Agriculture.

Courses 1a, 1b, 2a, 3a, and 3b are required for B. Agr.

Courses 4b, 5b, and 6b are required for students in Short Winter Course.

Facilities for Instruction :

Libraries.—The Agricultural Library contains more than 600 bound volumes and 5,000 pamphlets. One of the most valuable features of this library is a complete file of the publications of every Experiment Station in the United States, systematically arranged, and fully indexed. Files of the leading agricultural papers are accessible in the reading room. The general library of the University contains many volumes of great interest to students in agriculture.

The Agricultural Museum.—The value of a museum is mainly in furnishing illustrative material for study, and for this purpose the Agricultural Museum is well adapted. It contains a collection of wool fibers illustrating the influence of breeding and environment; a large assortment of cotton fibers and of fiber plants from various countries, and a systematic collection of the agricultural grasses of the United States. The forest woods of the State are represented by block specimens showing cross and transverse sections and bark characteristics, and by a collection of polished boards. Several hundred models of early patents of farm machines occupy a considerable portion of the museum. In live-stock there are skeletons of a horse, and hog, and two stuffed specimens of the wild white cattle of Great Britain.

The Farm.—The farm is fully equipped with improved agricultural machinery, a dairy building, hay and stock scales, sheep, cattle and horse barns and model swine pens. The farm and its equipment is used primarily for the instruction of students.

The Live Stock.—For the instruction of students in animal husbandry, the farm maintains typical specimens of the leading breeds of live stock. Among the breeds of cattle are a fine herd of Jerseys, and excellent specimens of Short-horns, Aberdeen Angus, and Herefords. A herd of grade steers are fattened each season. There are specimens of the leading breeds of sheep, swine, and poultry, together with grade animals.

The Dairy.—The College has, during the current year, equipped a dairy with several Babcock milk testers, aerators, improved milk and cream vats, various styles of separators, churns and butter workers, and with a complete sterilizing outfit for pasteurizing milk and cream on a large scale.

The Experiment Station Field —The field experiments of the Missouri Experiment Station offer exceptional opportunities for the study of comparative methods of cultivating and growing farm crops.

Horticulture.

Professor WHITTEN.

The following courses are offered:

- 1b. Horticultural methods. Lectures. *Second semester, M. W., at 8:30; P., at 1:30.* Professor WHITTEN. (Second Year.)

The work consists of lectures, supplemented by required readings and practical exercises. The propagation, transplanting, cultivation, pruning, gathering, and marketing of fruits and vegetables, are the principal topics discussed. When necessary, the lectures are given in the field, the green-houses, or the propagating rooms, in order that they may be illustrated by practical object lessons. Each student is required to make cuttings and grafts, prepare composts, sow seeds, transplant, prune, etc., performing as many of the various horticultural operations as the time will permit.

- 2a. Science of Horticulture. Lectures. *First Semester, T. Th. S., at 8:30.* Professor WHITTEN. (Third Year.)

Principles underlying the various horticultural operations. Plant growth and behavior of plants under culture; variation, selection, and crossing with reference to plant breeding. In this course the aim is to acquaint the student with the reasons for the various horticultural operations—how and under what conditions seeds germinate, cuttings take root, grafts unite, and wounds heal; what environments cause variation in plants; how our cultivated plants are brought to perfection from their wild types; and how and why cultivation affects plants.

- 3b. Forestry. Lectures. *Second semester, T. Th., at 8:30.* Professor WHITTEN. (Third Year.)

In this course are considered the influence of forestry on climate, soil, and flow of streams; the management of forests; the characteristics and uses of typical woods; the specific characters of our principal forest trees in their winter condition; and something of the first geography of the country.

- 4b. Landscape Gardening. Lectures. *Second semester, M. W., at 10:30.* Professor WHITTEN. (Third Year.)

The laying out and planting of ornamental grounds, the making of roads, lawns, flower and shrubbery borders, the consideration of trees, shrubs and flowering plants, are the principal topics of this course.

5. General Horticulture. (Twelve Weeks' Winter Course in Agriculture.)
Forty Lectures. Professor WHITTEN.

Construction and management of hotbeds and cold frames; propagation of plants, including germination of seeds, making cuttings, budding, grafting, and layering; pruning and cultivating orchards and small fruits, and spraying for insects and fungous diseases; originating and improving varieties of fruits and vegetables by cross-fertilization, selection, and cultivation. (See circular of Short Winter Courses.)

6. Nursery Work. Through January, in Winter School of Horticulture Lectures and Laboratory. By a practical nurseryman.

Twenty-four lectures on Practical Nursery Work embracing grafting, budding, packing for storage or shipment, growing and grading nursery stock, etc. In addition to the lectures, twelve afternoons will be devoted to the actual work of grafting, budding, grading, packing, etc.

7. Orchards and Small Fruits. Through February, in Winter School of Horticulture. Lectures and practical exercises. By a practical orchardist.

Twenty-four lectures, treating of soils and localities adapted to fruit; varieties; time and manner of planting; pruning; cultivation and general treatment; harvesting and marketing fruits. Twelve afternoons will be devoted to practical work in laying out and planting and pruning orchards; and to grading and barreling apples.

8. Market Gardening, and Hotbed Forcing. Through March, in Winter School of Horticulture. Lectures and practical exercises. By a practical market gardener.

Twenty-four lectures treating of the planting, growing, and marketing of the ordinary garden crops, such as cucumbers, mushrooms, radishes, lettuce, parsley, onions, etc.; hotbed construction; mixing of soils, planting, transplanting, and watering, bunching, marketing, and hotbed methods. In addition to these lectures, twelve afternoons will be devoted to practical work in growing tomatoes, asparagus, pieplant, lettuce, radishes, etc.

9. Floriculture, Landscape Gardening, and Fungous Diseases and Fungicides. In Winter School of Horticulture. Lectures. Professor WHITTEN.

Floriculture—Ten lectures and four practical exercises in the propagation and culture of flowers, including the making of cuttings, the mixing of soils, potting, watering, managing temperatures, germination of seeds, marketing cut flowers, etc.

Landscape Gardening.—Ten lectures on the laying out and planting of grounds, the making of drives and walks, the planting, pruning and management of trees, shrubs, and flowers.

Fungous Diseases and Fungicides.—Twenty lectures setting forth the nature of the destructive diseases of orchard trees, small fruits, and other plants. The causes of the various rots, blights, rusts, mildews, scabs, and other fungous diseases which prevail in our State will be

described, and specimens of diseased fruits and plants will be shown as object lessons, in the class room, so that the students will be able to recognize them. The nature of the attacks of these diseases upon plants, and how they spread from tree to tree and orchard to orchard, will be made plain. The best means of checking their attacks by sanitary methods and by spraying will be discussed and ample practice will be given in mixing, testing, and applying spraying solutions.

10a. Horticulture Laboratory. *First semester, M. W. F., at 8:30.* Professor WHITTEN. (Fourth Year Elective.)

Preceding courses are required. This course provides for carrying on independent lines of investigation—Variety study of fruits or vegetables on the grounds; propagation of plants under various conditions of heat, moisture, sunlight, etc., in the greenhouse and hotbeds; treatment of refractory seeds, and seed testing.

Facilities for Instruction :

The Horticultural grounds include 32 acres, containing a well-planted lawn, with shrubbery and flower borders, collections of various kinds of small fruits and grapes, and representative varieties of stone fruits, apples and pears. Over 500 varieties of orchard fruits are now growing on the grounds. Nut trees from selected stock are being put out, and our native wild fruits are being collected and planted. Many kinds of vegetables are grown every year. A class-room, an herbarium and seed room, a photographic room and a library have been equipped in a substantial brick building on the Horticultural grounds. A greenhouse, one of the finest in the State, has just been erected for practical work in Horticulture. This, together with a commodious propagating house and range of hotbeds, affords ample opportunity for teaching methods of propagating and forcing plants. The department has a Horticultural herbarium of moderate size. The experiment orchards, vineyards, vegetable plots and nurseries afford excellent facilities for instruction in horticulture. The department has a file nearly complete of the Experiment Station literature of the country, the Experiment Station card-index to this literature, the reports and proceedings of various State horticultural societies, and the leading horticultural journals. The Horticultural library has been increased to more than six times its former size, and it now contains many valuable cultural and scientific treatises, which afford good opportunity for research in practical methods and in the sciences that underlie them. These works are systematically arranged, and are being indexed. The Experiment Station literature is systematically arranged in chronological order, in convenient filing cases. The department has also received about 700 jars of preserved fruits and vegetables exhibited at the World's Fair, and has a good collection of seeds and of horticultural products.

Entomology.

Professor STEDMAN.

The instruction in Entomology is given by lectures supplemented by laboratory and field work. As far as practicable the student collects and studies his own specimens. The collecting is done systematically in the fall while the insects are still alive; later the field work is entirely replaced by laboratory work. The collecting includes the work done by insects, as well as their eggs, larvæ, pupæ, and adults, while their habits and economy receive due attention. The lectures cover the external and internal anatomy, life histories, habits, economy, and classification of insects; the characteristics of the orders, sub-orders and principal families, with special emphasis upon those of economic importance, and the best methods of combatting their ravages. The laboratory work embraces the study, by means of actual specimens, of the internal and external anatomy, life histories, habits, economy, breeding, identification or determination of genera and species, and the classification of those insects found in our fauna; and also economic work and original investigation for advanced students.

The following courses are offered:

- 1a. General Entomology. (1) Lectures. Internal and external anatomy, life histories, habits, economy, characteristics, classification, methods of destruction, machines and insecticides, Apiculture. *First semester, W. F., at 8:30.* (2) Laboratory work, collecting, preserving, breeding, methods, habits, life histories, work, external anatomy, identification or determination of orders, families and genera, classification. *First semester, M., at 1:30.* (Fourth Year.)
2. Economic Entomology. (For students in the Short Winter Course.)
See special catalogue, to be issued in October, 1897.
- 3b. Advanced Entomology. Lectures and Laboratory work. Internal anatomy, histology, physiology, embryology, breeding, life histories, habits, economy, distribution, dimorphism, mimicry, determination of species, classification. *Second semester, at hours to be appointed.* (Fourth Year Elective.)
Must be preceded by Course 1a.
4. Graduate work in Entomology. Laboratory work. Monographing a group (scientific), monographing a species (economic). *Both semesters, at hours to be appointed.*

Must be preceded by Course 3b.

All courses in Entomology are elective for Academic and other students. Agricultural students may elect Course 3b in the Senior year, and Course 4 in the Graduate years.

Facilities for Instruction and Research:

The Entomological Department occupies the second floor of the Horticultural Building. The laboratory contains an Entomological Cabinet illustrating the habits, work, and life histories of the more important injurious and beneficial insects; also, several thousand species of adult insects from all orders, correctly classified and labeled, and accessible to the student for reference and comparison, as well as for use in illustrating the lectures.

The general laboratory is supplied with compound microscopes, dissecting instruments, glassware, a large microtome, paraffine bath, hot oven, large and small breeding cages and jars, aquaria, spraying machines of various kinds, insecticides, and reagents. The Department subscribes for and receives twelve current periodicals on the subject of Entomology. These are kept in the laboratory in connection with the department library, and are accessible to the students at all times.

Agricultural Chemistry.

Professor SCHWEITZER.

1a. Agricultural Chemistry. *First semester, T. Th. S., at 9:30.* (Third Year.)

General introduction; functions of the plant, including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell, an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membraneous diffusion; assimilation; conditions of vegetation.

1b. Agricultural Chemistry. *Second semester, T. Th. S., at 9:30* (Third Year.)

Soil,—its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat and moisture. Soil physics in general. Manures, natural and artificial; their composition, application, value. Theory of rotation of crops; extensive and intensive cultivation; industrial agriculture in general. Farm sanitation; air, respiration, vitiated air and ventilation, infection, contagion, germ theory of disease. Water: potable water, hard and soft; impurities in it, and their effects upon health and life. Food, composition and general properties; preservation of food, and food adulterations.

Veterinary Science.

Drs. CONNAWAY, WHITE, and BOLTON.

1b. The Anatomy, Physiology and Hygiene, of the domesticated animals.

Second semester, T. Th. S., at 8:30. Professor CONNAWAY.

(Second Year.)

This course is given by lectures, and laboratory work, the latter consisting of the complete dissection of one or more animals, and a

comparative study of such organs as show variations in the different species; charts, models, and prepared specimens will also be available for illustrating this study. Practical demonstrations will be given in the Physiological laboratory of the more important functions of the animal body. The study of food stuffs and the action of the digestive fluids will receive special attention.

- 2a. Veterinary Medicine and Surgery. *First semester, M. W. F., at 8:30.*
Professor CONNAWAY. (Third Year.)

The first half of the semester is devoted to the study of those diseases that affect the internal organs: as the lungs, stomach, intestines, urinary organs, etc.; the second half of the semester is given to the study of the diseases and conditions that require surgical treatment: as lameness, wounds, abscesses, tumors, etc. A clinic is held one afternoon of each week for the treatment of the diseases discussed in the classroom. In proper season instruction is given in castration, spraying, and caponizing.

- 3b. Contagious and Infectious Diseases, and Quarantine regulations. *Second semester.* Dr. WHITE. (Third Year.)

A series of lectures by Dr. T. E. White, State Veterinarian, on Glanders, Anthrax, Black leg, Tuberculosis, *maladie du cor*, Texas fever, etc., and the means by which these diseases are controlled.

- 4a. Bacteriology. Lectures, and recitations, with about eight weeks of daily practice in the cultivation of bacteria upon artificial media, and the bacteriological examination of water, air, soil, milk, butter, and cheese. Text, Abbot's Principles of Bacteriology. *First semester, T. Th., at 11:30.* Dr. BOLTON. (Fourth Year.)

- 4b. Bacteriology. A study of the pathogenic germs affecting man and the domesticated animals. *Second semester, T. Th., at 11:30* Dr. BOLTON. (Fourth Year.)

Mechanic Arts.

Professor MARX; Mr. PLACE; Mr. MASON.

The following courses are offered:

1. Wood-working and Pattern-making. *M. W. F., at 10:30-12:30.*
(First Year.)

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern making.

2. Forging. *First semester, M. S., at 1:30; Second semester, M. F., at 1:30.*
(Second Year.)

These courses are expected to give the student not only a knowledge of the methods of the blacksmith, but also manual skill in the handling of tools.

3. Machine-work (For Junior Engineering). M. W. F , at 1:30.

The instruction in the machine-shop, as at the forge, is carried on in substantially the same manner as in the wood-work. The course begins with a series of graded exercises, which give the student familiarity with the tools of the craft, and with the operations for which they are particularly designed, and ends with practice in the construction of parts of machinery, and, time permitting, in the building of complete machines.

Courses 1 and 2 are for students in the College of Agriculture and Mechanic Arts, and for Engineers. Course 3 is for Engineers only.

For statement and description of facilities of instruction, see announcement of the School of Mechanic Arts, pages 126-7.

Drawing.

Mr. PLACE, Instructor.

Three courses are offered: 1. For Students in the Normal Department; 2. For Students in the College of Agriculture and Mechanic Arts; 3. For Students in Engineering.

1. Normal Drawing. The object of this course is to show what kind of drawing should be taught in our district schools, and how to teach it. The National Drawing System and text-books have been adopted for this course. Students that have done good work elsewhere in this system will be given credit for it.

2. Agricultural Drawing. The course is especially arranged to be of practical value to the farmer in designing buildings, machinery, and in planning repairs about the farm.

3. Engineering Drawing. This course is very complete, and it is expected that the student will be a thorough draughtsman when he has finished it. Briefly, it consisted of geometrical projections, round writing, lettering, free-hand drawing, problems in descriptive geometry, elements of machine drawing, colored and pen topography, tracing, blue-printing, and brush shading.

Desks and lockers are provided by the University; all instruments, materials, supplies, etc., are to be furnished by the student.

Commercial Studies.

Miss PORTER.

The work in this course does not cover that provided by a full Business College Course, but is designed for those who wish to conduct and record the ordinary business transactions of every-day life in a business-like and systematic manner.

To this end instruction is given in correspondence, making out bills and statements, writing receipts, cheques, notes and drafts, together with the use of the various account books. An important part of the work will be a thorough drill in journalizing, concluding with the writing up of entire sets of books, that the student may make a practical application of his previous work in the various business forms.

This work is required in both semesters of the First Year.

Stenography.—A course in stenography is provided for those students who wish to carry on the study while prosecuting regular work in the University.

Three hours of class room work, supplemented by at least the same time of preparation, are required. The first semester will be devoted to thorough drill in the principles of the system adopted, and the second semester to an application of these principles in reading and dictation exercises. These exercises will include correspondence, addresses, and court-reporting. At the end of the year it is expected that the student will have attained a speed of from sixty-five to ninety words a minute, according to his application to the work. During the first year more attention is given to accuracy in writing and *reading*, than to practice for speed.

Those wishing to make the study valuable will continue dictation exercises during the second year.

Military Science.

Lieut. THURSTON.

An officer of the regular army is detailed by the War department as Professor of Military Science and Tactics, to carry out the provisions of the act of Congress of 1862, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

Students taking this instruction are required to conform to the special rules and regulations prescribed for the Military department. These requirements are so adjusted as to harmonize with the regular class-work.

The instruction offered in this Department is open to all students of the University. Military drill is given at least three times a week, from 4 to 5 o'clock. Each Senator and Representative of the General Assembly of Missouri, is authorized by law to appoint two cadets from his district. Such cadets are matriculated in the Academic and Agricultural Departments free of tuition and other fees, except Laboratory deposits. For information about cadetships, uniforms, cadet band, equipment in artillery and small arms, see announcement of the Department of Military Science and Tactics, pages 95-99.

English.

Assistant Professors PENN and BELDEN.

The courses in English embrace the study of language, composition, and literature, arranged as follows:

- 1a. Essentials of English. The Grammar of English, with readings and exercises. Shakspeare's "Tempest," or some like classic, will be used in the class-room. *First semester, M. W. F., at 9:30.* (First Year.)
- 1b. Essentials of English. Analysis, Word Formation, and Composition, with readings in some masterpiece, exercises, and weekly compositions. *Second semester, M. W. F., at 9:30.* (First Year.)

Longman's English Grammar (revised) and Keeler and Davies' Studies in English Composition will be the text-books and basis for the work in courses 1a and 1b.

- 2a. Composition, and Literature. Readings, class-room interpretation, accompanied by constant essay work. *First semester, T. Th. F. S., at 9:30.* (Second Year.)

The masterpieces announced for the English entrance examination of the following session will, so far as convenient, constitute the work. See pages 41-43.

Political Economy.

*Professor HICKS; Acting Professor LOEB; Acting Assistant Professor HAMMOND.

The following courses are required:

- 1a. Theory of Economics. *First semester, M. W. F., at 11:30.* (Fourth Year.)
- 2b. Theory of Finance. *Second semester, M. W. F., at 11:30.* (Fourth Year.)

Course 2b must be preceded by 1a.

Mathematics.

MR. CAITHORN.

The following courses are required:

1. Elementary Algebra. *T. Th. S., at 8:30.* (First Year.)
Text: Hall & Knight's Elementary Algebra (Revised by Sevenoak).

*Absent for session of 1896-7.

2. Plane Geometry. *W. F., at 8:30.* (First Year.)

Text: Chauvenet's Plane Geometry.

- 3a. Elementary Algebra. *First semester, T. Th. S., at 10:30.* (Second Year.)
Text: Same as in Course 1.

- 4a. Plane Geometry. *First semester, W. F., at 10:30.* (Second Year.)
Text: Same as in Course 2.

- 5b. Algebra and Geometry. *Second semester, T. Th. S., at 10:30.* (Second Year.)

Candidates for admission to any of these courses must pass a satisfactory examination on Arithmetic.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

The following courses are required:

- 1a. Elementary Physics. *First semester, M. W., at 11:30; S., at 1:30.* (First Year.)
2b. Elementary Physics, and Laboratory. *Second semester, M. W., at 11:30; S., at 1:30.* (First Year.)
3a. Advanced Physics. *First semester, M. W. F., at 1:30.* (Third Year.)

For further information, see Physics, in Academic department, page 69.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. DINSMOOR.

The following courses are required:

- 1a. Elementary Chemistry. *First semester: Lectures, M. W., at 9:30. Laboratory, T. W., at 1:30.* Professor BROWN, and Mr. DINSMOOR. (Second Year.)
1b. Qualitative Analysis. *Second semester: Lectures, M. W., at 9:30. Laboratory, T. W., at 1:30.* Assistant Professor CALVERT, and Mr. DINSMOOR. (Second Year.)

The following courses are elective:

- 4b. Quantitative Analysis. See page 70.
3. Sanitary and Physiological Chemistry.
For details, see page 92.

Botany.

Professor AYERS; Mr. THOMPSON.

- 1b. Systematic Botany. Recitations, and identification of the local phanerogamic flora. *First semester, T. Th. S., at 9:30.* (Second Year.)

Text-book: Gray's Manual and Lessons in Botany. The main object of this course is to familiarize the student with the local flora, especial attention being devoted to the native useful and harmful plants.

- 2a. Vegetable Physiology. Lectures and laboratory. *First semester, T. Th. S., at 10:30.* (Third Year.)

- 2b. Vegetable Physiology. Lectures and laboratory. *Second semester, T. Th. S., at 10:30.* (Third Year.)

Text-book for Courses 2a and 2b, Bergen's Elements of Botany and Vine's Physiology of Plants. These courses are intended to introduce the student into the elements of the structure and functions of plants (*First semester*), and to give him special laboratory practice in the physiological problems of several species of important economic plants.

Geology.

Emeritus Professor BROADHEAD; Mr. MARBUT.

The following course is required:

- 4b. Economic Geology. *Second semester, T. W. F., at 10:30.* (Fourth Year.)

This course deals with subjects from their economic aspect, such as water supply, mineral springs, fertilizers, the origin and relation of soils to the underlying rock structure, clays, cement, etc. Text-book: Tarr's Economic Geology.

Climatology.

Mr. A. E. HACKETT.

- 1a. Climatology. *First semester, M., at 10:30.* (Third Year.)

This course covers Elementary Meteorology, the laws of storms; weather forecasts, how made, and distributed, and the advantages to be derived from them; frosts, how they may be anticipated, and what measures may be taken to prevent damage therefrom; weather charts and their uses; the climate of Missouri; local climatic peculiarities, and their effects upon certain crops.

B. SCHOOL OF MECHANIC ARTS.

CHRISTIAN WILLIAM MARX, B. E.,

Superintendent.

ARTHUR HARRINGTON PLACE, C. E.,

Instructor in Drawing.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

The University has not developed the School of Mechanic Arts as separate on the one side from the School of Agriculture, and on the other side from that of Engineering. While the courses in Mechanic Arts are open to students of all departments, and are taken by some in every department, the great majority of the students taking this instruction belong to the School of Agriculture or to that of Engineering. Hence, they are taught in English, Modern Languages, Mathematics, the Sciences, and other studies, by a number of teachers, whose names are given in the Faculty of the School of Agriculture, or that of the School of Engineering.

Facilities for Instruction:

The building for Mechanic Arts, 108×117 feet, has two stories and a basement. It contains six work-shops 40×40 feet, an exhibit hall 25×40, two offices 16×18, one drawing-room 40×40, two class-rooms 18×22, besides store-rooms, an engine-room, lavatories, etc. The machinery is driven by a 60-horse power Corliss engine.

Four hundred students in classes of 24, each class occupying two hours and a half a day, can easily be taught. The carpenter and pattern shop has accommodations for four classes of 24 students each. Each student has for his exclusive use a lock-drawer and a set of tools, for the care and safety of which he is held responsible.

There are 25 speed lathes for wood turning, 25 sets of bench tools, 96 sets of edge tools, and as many lock-drawers.

The blacksmith-shop is equipped with 25 forges, 25 anvils, and 25 sets of anvil and forge tools.

The machine-shop is equipped with three screw-cutting engine lathes 14" swing, 8' bed; one screw-cutting engine lathe 18" swing, 8' bed; one polishing lathe 12" swing, 6' bed; one 26×26 Gray planer; one 18" crank-shaper; one pipe-cutting and threading machine; one wet and dry emery grinder and surfacer; one 24" drill-press; and with tool-room and ample bench outfit.

The blast for the forges is supplied by a power blower. A 48" exhaust fan keeps the shops cool and free from smoke and gases, even when all fires are going in the forges.

Two large shops, each 40×45 feet, are as yet unfurnished, but will be equipped with benches and speed lathes or moulding outfit to suit the demands of the future.

The whole building is lighted by a 360-lamp dynamo, situated in the engine-room.

The teaching is by lectures. The instructor at the bench, machine, or anvil fully explains the principles to be used, and all work involving new principles is executed in the presence of the whole class. Free use is made of drawings and the black-board.

When every step has been explained, the class proceeds to the execution of the work, while the instructor superintends and gives help to such as need it.

A series of 25 or 30 graduated exercises is given in each shop. All the work is disciplinary; special trades are not taught, nor are articles manufactured for sale. The value lies in the educational result of each exercise, in training the mind and hand to act simultaneously—the hand at the will of the mind.

Courses:

The School of Mechanic Arts offers several elementary courses to students in the School of Agriculture, which are announced on page 120. A four-years' course is outlined in Mechanical Engineering (see page 134), which leads to a professional degree.

For information as to tuition fees and other expenses, see page 22.

C. SCHOOL OF ENGINEERING.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President.

HENRY JACKSON WATERS, B. A. S.,

Dean of the Faculty.

CHRISTIAN WILLIAM MARX, B. E.,

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

HARRY THOMAS CORY, M. M. E., C. E.,

Professor of Civil Engineering.

HOWARD BURTON SHAW, B. C. E., A. M.,

Assistant Professor of Electrical Engineering.

WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, and Assistant Professor of Mathematics.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

SILAS DINSMOOR, A. B.,
Instructor in Chemistry.

ARTHUR HARRINGTON PLACE, C. E.,
Instructor in Drawing.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Instructor in Geology.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

EDGAR E. BRANDON, A. B.,
Teaching Fellow in Romance Languages.

INEZ RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

Requirements for Admission:

The following are the requirements for admission to the Freshman Class for the session of 1897-98.

1. French or German—two years' work.

The two years' work in German means the ability to read at sight ordinary German prose, and to translate simple English sentences into German, and includes a correct pronounciation of the language. Two years' work in French means a like ability in French. For the present the University provides instruction for such students as have not had the two years of French or German required for entrance, and are therefore conditioned thereon.

2. English. Same as for the Academic department. See pages 41-42.

3. Mathematics. Algebra and Plane Geometry. The equivalent of Smith's Elementary Algebra, and of Wentworth's or Bowser's Plane Geometry is required.

4. Science. One year's work each, with laboratory practice, in any two of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. History. Same as for the Academic department, B. L. Course, page 42.

No student deficient in Mathematics will be allowed to enter the Engineering department.

Courses:

The three courses offered below lead respectively to the degrees of Bachelor of Science in Civil Engineering, and Bachelor of Science in Electrical Engineering, and Bachelor of Science in Mechanical Engineering. A special course of one year in Civil Engineering for surveyors leads to a Certificate.

During the vacation following the Junior year, Engineering students are required to visit, and to write a report, with necessary drawings, of some engineering enterprise in their respective lines of work.

A course in Civil Engineering, and courses in Mining Engineering and in Chemistry and Metallurgy, are given in the School of Mines and Metallurgy at Rolla, which is a department of the University. See pages 139-140.

For general statement as to buildings and equipment, see pages 15-17.

For information as to tuition charges, fees, etc., see page 22.

Degrees:

The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

Civil Engineering.

Professor CORY.

The instruction is given by means of lectures and recitations, supplemented by draughting, field and laboratory work. The field work embraces the modern methods of land, railroad and mining surveying, while laboratory work is provided in Chemistry, Geology, Physics, and Engineering. The course of instruction has been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practical engineers.

There is a complete equipment of Transits, Compasses, Levels, Chains, Leveling-rods, Stadia rods, etc., and students have free access to museums and laboratories of all the other departments of the University.

COURSE IN CIVIL ENGINEERING.

Freshman Year.

First Semester.

Mathematics—Solid Geometry and Higher Algebra.....	5
English—Rhetoric, Composition and Literature.....	3
French or German—Grammar and Reader.....	3
Drawing—Free-hand shading, geometrical projections, lettering.....	4
Shop—Use of joiners' tools and wood-turning.....	3

Second Semester.

Mathematics—Trigonometry and Higher Algebra.....	5
English—Rhetoric, Composition, and Literature.....	2
French or German—Reading.....	3
Descriptive Geometry—Orthographic projections, problems of points, lines and planes. Representations of surfaces, tangencies and intersections, perspective and isometric	4
Drawing—Problems in Descriptive Geometry.....	2
Shop—Pattern-making	2

Sophomore Year.

First Semester.

Chemistry.....	4
Drawing—Elements of machine drawing.....	2
Surveying—Use of instruments, the theory and practice of Land Surveying, Topography	4
Physics	3
Mathematics—Analytical Geometry.....	3
Shop—Forging.....	2

Second Semester.

Physics.....	5
Drawing—Tinting, tracing, blue printing and topographical.....	2
Chemistry.....	4
Mathematics—Calculus.....	8
Shop—Forging.....	2
Metallurgy.....	2

*Junior Year.**First Semester.*

Mechanics of Engineering.....	5
Calculus.....	8
Railroad Engineering—Economic theory of location, curves, field engineering, etc.....	5
Steam Engineering—Types of engines and boilers, details of construction, indicator, valve gears and valve adjustments.....	8
Elective	0-2

Second Semester.

Mechanics of Engineering.....	8
Calculus.....	8
Framed structures—Analytical and graphical analysis.....	3
Geology—Economic.....	8
Engineering laboratory.....	2
Surveying—Two weeks' field practice and one week's office work....	1
Elective	0-8

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

*Senior Year.**First Semester.*

Astronomy—Practical Astronomy, with night observations.....	5
Masonry and Foundations.....	8
Bridge Engineering—Design and details.....	8
Machine Design	2
Engineering laboratory.....	2
Elective	0-8

Second Semester.

Geodesy and Least Squares—Figure of the earth, U. S. Coast and Geodetic Surveys, etc.	3
Hydraulic Engineering—Water collection and distribution, water-wheels, turbines.....	3
Right and Oblique Arches—Stereotomy and stone-cutting.....	3
City and Sanitary Engineering.....	3
Engineering laboratory.....	2
Geodetic Practice—Two weeks' field practice and one week's office work.	1
Elective	0-3

COURSE IN SURVEYING.

A special course in Surveying is offered in addition to the regular four years' course. This is designed especially for those wishing to fit themselves for the position of County Surveyor or Government Land Surveyor. A certificate of proficiency is given to those who complete this course, which may be done in forty weeks. The requirements for entrance are the same as those required for the regular course, with a working knowledge of Trigonometry added.

For the Rollins scholarship, see page 26.

Electrical Engineering.

Assistant Professor SHAW.

This course is designed to furnish training in the fundamental principles underlying all engineering practice, and in the theory and technical details of the most important branches of Electrical Engineering.

Instruction is given by means of recitations, lectures, and laboratory work.

Especial attention is paid to alternating current phenomena, as well as the theory, design, construction, installation, and testing of electrical machinery of all kinds.

The apparatus is new, from the best makers, and includes instruments for electrical measurements of precision, a storage battery conveniently arranged for testing, an electric light plant, various types and sizes of direct and alternating current dynamos and motors, measuring instruments, etc.

COURSE IN ELECTRICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 130).

Junior Year.*First Semester.*

Mechanics of Engineering	5
Calculus.....	3
Direct Current Dynamos—Theory, design and testing.....	5
Electrical measurements.....	2
Elective.....	0-3

Second Semester.

Mechanics of Engineering.....	3
Calculus.....	3
Direct Current Dynamos—Theory, design and testing.....	4
Mathematical Electricity and Magnetism—Elementary theory of electro- statics and electrodynamics.....	3
Electrical measurements.....	2
Elective.....	0-3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method or construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.*First Semester.*

Alternating Currents—Theory of; study, design and testing of alternate current machinery.....	4
Steam Engineering—Types of engines and boilers, details of construc- tion, indicator, valve-gears and valve adjustments.....	3
Machine Design	2
Heat and Light.....	3
Shop—Machine and vise work on metals.....	3
Elective.....	0-3

Second Semester.

Alternating Currents—Theory of; study, design and testing of alternate current machinery.....	5
Dynamo Design and Construction	5
Steam Bollers.....	2
Shop—Machine and vise work on metals.....	3
Elective.....	0-3

Mechanical Engineering.

Professor MARX.

The practical and theoretical training given is intended to prepare young men for responsible positions. The practical work familiarizes them with the use of machine and hand tools; the theoretical acquaints them with the principles underlying all machine construction. Students thus become familiar with the conditions and problems that confront all designers, and all managers of machine shops.

In the study of prime movers, special attention is given to turbines and other water motors, and to the steam engine.

In machine construction, the theory of mechanism is thoroughly studied. It embraces the study of gearing, screws, cranks, and levers, together with the design of machines and the materials used in their construction.

In mill-work are fully treated ventilation, heating, lighting, fire protection, and the arrangement of shafting, belting, and machinery in manufacturing establishments, practical problems involving strength of shafting, belting, gearing, and the electrical transmission of power.

In steam engineering, attention is given to chimneys, furnaces, boilers, and the setting of boilers with reference to proper combustion of fuel, to securing the greatest efficiency in the production of steam, and to proportioning parts for strength, durability and accessibility to facilitate repairs and cleaning. The care and management of boilers, engines and entire steam plants is an essential part of the study.

While pursuing the foregoing studies, the student is required to make plans, working drawings, and estimates.

In the laboratory, tests are made of engineering materials with regard to tension, crushing, elongation and shearing; engine and boiler trials, as to efficiency; calorimeter trials as to quality of steam; valve setting by aid of indicator. The erection, alignment and setting of engines are especially considered.

COURSE IN MECHANICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the course in Civil Engineering, page 130.

Junior Year.

First Semester.

Mechanics of Engineering—Statics, dynamics.....	5
Steam Engineering—Elements of steam engineering; description of types of boilers; engines, details of construction, dimensions for given power plant, use and study of steam engine; indicator, valve gears and valve adjustments.....	3

Mathematics—Calculus.	3
Kinematics—Principles of mechanism, rolling curves, teeth of wheels, quick return motion, straight line motion.....	2
Applied Electricity.....	3
Elective.....	0-2

Second Semester.

Mechanics of Engineering—Strength of material.....	3
Applied Electricity.....	3
Framed Structures—Analytical and graphical treatment.....	3
Mathematics—Calculus.....	3
Kinematics—Valve and link motions.....	2
Boilers.....	2
Elective.....	0-2

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method or construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Steam Engines—Detail study of different types, design and construction.	3
Mechanical drawing—Design of engine and boiler.....	2
Framed Structures—Iron roof and building; construction, design and detail	3
Machine design.....	2
Shop—Machine and vise work.....	3
Heat and light.....	3
Elective.....	0-2

Second Semester.

Thermodynamics of steam and other heat engines.....	2
Mill Engineering—Mill and factory construction, ventilation, steam-heating, fire protection.....	2
Hydraulics and Hydraulic Motors—Water wheels, turbines and pumps...	3
Mechanical Drawing—Engine, details and estimates.....	3
Mechanical Laboratory.....	2
Shop—Machine and vise work.....	3
Elective.....	0-3

The students in Mechanical Engineering have the use of full sets of working drawings of standard modern engines, a small but well-equipped technical library, Indicators, Planimeters, Calorimeters, Tachometers, Thermometers, Crosby Steam-gauge Tester, Injectors, Absorption and

Transmission Dynamometers, Engine models, etc. They have the advantage of the shops of the College of Agriculture and Mechanic Arts. In these shops they are trained in the use and care of wood and iron-working tools. The 12" X 36" Corliss engine and five boilers (one down draft and four tubular return) are used for experiment work. They aggregate 600-horse power.

The students in Mechanical Engineering have the use of the Testing, Hydraulic and Cement laboratories of the Civil Engineering department, and the Electrical laboratory, in such branches as are required by the M. E. course.

For description of shops, see "School of Mechanic Arts," page 126.

D. SCHOOL OF MINES AND METALLURGY

(AT ROLLA, MISSOURI.)

EXECUTIVE COMMITTEE.

R. B. OLIVER, Chairman.....	Jackson
M. E. BENTON.....	Neosho
J. T. MOORE.....	Lebanon
M. F. FAULKNER,	D. W. MALCOLM,
Secretary.	Treasurer.

FACULTY.

- RICHARD HENRY JESSE, LL. D.,
President.
- WALTER BUCK RICHARDS, M. A.,
Director, and Professor of Mathematics.
- ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Engineering.
- COURTNEY DEKALB,
Professor of Mining and Metallurgy.
- ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.
- EUGENE THOMAS ALLEN, A. B., Ph. D.,
Professor of Chemistry.

School of Mines and Metallurgy—Admission 137

PAUL JULIUS WILKINS, B. S.,

Instructor in Academic Department, and Librarian.

THOMAS LEWIS RUBEY, A. M.,

Instructor in Academic Department, and Secretary of the Faculty.

GEORGE EDWARD MILLER, B. S.,

Instructor in Shop-work and Drawing.

PAUL ARMSTRONG LARSH,

Assistant in Chemical Laboratory.

INTRODUCTORY STATEMENT.

Organization :

In 1870, the General Assembly in accepting the donation by the general government of lands for educational purposes established an Agricultural College and a School of Mines and Metallurgy, "the leading object of these Colleges" being "to teach such branches as are related to agriculture and the mechanic arts and mining, including military tactics, and without excluding other scientific and classical studies, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." (R. S. 1889, Sec. 8739.) The statutes fix the status of the School of Mines as a College of the State University. Its affairs are under the immediate supervision of an Executive Committee, consisting of three members of the Board of Curators of the University.

Location :

The School is located at Rolla, the county seat of Phelps county, on the St. Louis & San Francisco railroad, about midway between St. Louis and Springfield. Rolla is a town of about 2000 inhabitants; it has an altitude of 1140 feet above sea level, and enjoys an agreeable and notably healthful climate.

Requirements for Admission:

1. English. Grammar and Composition: Rules of syntax; analysis of sentences; correction of ungrammatical expressions. An essay upon one of several topics assigned will be required, and this will be graded with respect to spelling, punctuation, use of capitals, grammatical correctness, and thought.

2. Elementary Algebra as far as Quadratics. Use of signs, factoring, highest common factor, lowest common multiple. Fractions, simple equations, square root, and cubic root.

3. Elementary Physics. Properties of matter, laws of motion, mechanics of fluids, heat.

In 1898 it is expected to require three books of Plane Geometry.

Courses:

The School of Mines offers three professional courses:

I. MINING ENGINEERING.

II. CIVIL ENGINEERING.*

III. CHEMISTRY AND METALLURGY.

Course I is a general course in Mining Engineering, suited to fit a man for the conduct of mining operations in all their variety, from the prospecting for the mine through its working and the treatment of its ores to the delivery of the finished product on the market.

Course II is a course in Engineering as applied to railways, highways and municipal works.

Course III is a course in which some of the higher Mathematics and Engineering of Course I are replaced by more detailed work in Chemistry and Metallurgy. It has in view especially processes subsequent to the delivery of the ore above the ground, and fits a man to work as assayer and chemist, or in other connection, with concentrating plants and smelters. In the Senior year an option is allowed the student, as he may prefer to specialize more upon the metallurgical or upon the chemical side.

Degrees:

For the completion of any of these courses the degree of Bachelor of Science (B. S.) is given. The further degree of Engineer of Mines (E. M.), Civil Engineer (C. E.), or Metallurgical Engineer (Met. E.), may be given either for an additional year's work in residence, selected with the approval of the Faculty from the graduate courses; or may be conferred on one who, since his graduation as B. S., has had experience in the actual practice of his profession, of such duration and value as in the judgment of the Faculty to warrant its bestowal.

*A course in Civil Engineering is taught at Columbia, also. See page 130.

SCHEME OF STUDIES.

In the scheme below, a brief outline of the courses is given, with the number of exercises a week in each subject. To each lecture and recitation an hour is allowed, while exercises in laboratories, drawing-room or field take from two to four hours each.

FRESHMAN AND SOPHOMORE YEARS (ALL COURSES).

FRESHMAN YEAR.				SOPHOMORE YEAR.			
Terms.....	1	2	3	Terms.....	1	2	3
Geometry	5	5	.	Analytic Geometry.....	5	2	.
Higher Algebra.....	5	.	.	Descriptive Geometry .....	.	5	.
Trigonometry .....	.	5	5	Inorganic Chemistry.....	4	.	.
Chemistry.....	4	.	.	Applied Chemistry.....	5	.	.
English.....	.	5	5	Differential Calculus.....	.	.	5
Physics .....	.	.	5	French or German.....	3	3	5
				Advanced Physics.....	.	.	5
Drawing.....	2	2	2	Surveying.....	3	.	.
Shop-work	2	2	2				
Chemical Laboratory	1	1	1	Drawing.....	.	2	.
				Chemical Laboratory.....	2	3	4
				Field Practice.....	3	.	1

In the Course in Chemistry and Metallurgy some equivalent may be substituted for Surveying, and German is required.

JUNIOR YEAR.

MINING ENGINEERING.				CIVIL ENGINEERING.				CHEMISTRY AND METALLURGY.			
Terms.....	1	2	3	Terms.....	1	2	3	Terms.....	1	2	3
Physics.....	5	2	.	Physics.....	5	2	.	Physics.....	5	2	.
Integral Calculus	3	.	.	Integral Calculus	3	.	.	Integral Calculus	3	.	.
Mechanics.....	.	.	5	Mechanics.....	.	.	5	Theoretical Chem	.	5	5
Masonry Constr..	.	3	.	Masonry Constr..	.	3	.	Stereotomy .....	.	.	1
Stereotomy.....	.	.	1	Stereotomy.....	.	.	1	German	5	.	.
French or Ger....	5	.	.	French or Ger....	5	.	.				
Mining.....	.	3	5	Lines of Commu- nication .....	.	.	5	Organic Chem....	.	.	4
				Metallurgy.....	.	.	4	Metallurgy .....	.	.	4
Metallurgy .....	.	.	4	Elective .....	.	5	.	Ore Dressing.....	.	4	.
Ore Dressing.....	.	4	.	Mineralogy.....	.	2	.	Mineralogy.....	2	2	.
Mineralogy.....	2	2	.								
				Physical Lab.....	2	2	2	Chemical Lab....	2	3	2
Chemical Lab....	3	3	.	Drawing, Field Practice	3	3	3	Physical Lab	2	2	2
Physical Lab....	2	2	2					Drawing.....	.	.	1
Drawing.....	.	.	2					Ore Dressing.....	1	.	1
Ore Dressing.....	1	.	1								

SENIOR YEAR.

MINING ENGINEERING.				CIVIL ENGINEERING.				CHEMISTRY AND METALLURGY.			
Terms.....	1	2	3	Terms.....	1	2	3	Terms.....	1	2	3
Geology.....	5	.	3	Geology.....	5	.	3	Geology.....	5	.	3
Electr. Transm...	.	5	1	Electr. Transm...	.	5	1	Electro-Metall...	.	4	.
Metallurgy.....	5	5	.	Bridge and Sanitary Engin .....	.	.	3	Metallurgy.....	5	5	.
Hydraulics.....	.	5	.	Hydraulics.....	.	5	.	Masonry Constr..	.	3	.
Framed Structures.....	5	.	.	Framed Structures.....	5	.	.	Thermodynamics.....	2	.	.
Steam Engine and Power Transmission .....	.	.	3	Steam Engine and Power Transmission.....	.	.	3	Metall. Problems	.	.	2
Elective.....	.	.	3	Astronomy.....	3	.	.	Organic Chem....	3	2	.
Physical Lab.....	.	2	.	Elective.....	.	3	.	Elective.....	.	.	5
Designing.....	3	2	.	Physical Lab.....	.	3	.	Physical Lab.....	.	3	.
Metall. Lab.....	1	.	1	Drawing and Field Practice..	5	2	.	Designing.....	3	.	.
Thesis.....	.	.	5	Thesis.....	.	.	5	Chemical Lab....	1	2	.
								Metall. Lab.....	1	.	1
								Thesis.....	.	.	5

SPECIAL COURSES.

For the benefit of those who may lack the time, the money or the inclination to spend four years in preparation for professional work, certain special courses, designed to confer competent knowledge of particular departments of engineering work, are offered. These are:

I. ASSAYING AND TECHNICAL ANALYSIS.

This includes General Chemistry, Inorganic Chemistry, Qualitative Analysis, Applied Chemistry, and a years's work in Assaying and Quantitative Analysis. It will require from a year and a half to two year's, according to the preparation and diligence of the student.

II. SURVEYING.

The purpose of this course is to turn out competent Land and Mine Surveyors and fair draughtsmen. The essentials of it are a thorough knowledge of Algebra, Geometry, Trigonometry, Surveying, Descriptive Geometry and Stereotomy, with field Practice and Drawing. It may be completed in one year or in two years, according to the advancement of the applicant upon entrance. By combining with this the courses in Mineralogy, Geology, Mining and Ore-dressing, industrious students, especially such as have had some practical experience, may in two years attain considerable competency for the conduct of mining operations.

III. ELECTRICITY.

A knowledge of the theory of Electricity and some acquaintance with its manifold applications in the arts is in these days of prime importance to every engineer—especially to the mining engineer, whose duties are so varied. Hence, in the regular courses this subject receives a liberal share of attention. This special course includes the shop work, Chemistry through the Sophomore year, Mathematics through the Calculus, and all the Physics of the regular course in Mining Engineering, and in addition the study of Electricity and Magnetism (Silvanus Thompson), and Practical Electricity (Sligo & Brooker), for three hours a week for one year, with accompanying Laboratory work.

For the satisfactory completion of any of the special courses a Certificate of Proficiency in the course pursued is granted.

GRADUATE COURSES.

As mentioned on page 139, an opportunity is offered for Bachelors of Science to obtain the Engineer's degree by a year's graduate work in residence, the character and content of this work to be arranged between the applicant and the Faculty.

Those who elect work in Mathematics as part of their assignment may make a wider study of Conic Sections by both Algebraic and Projective methods (Salmon, Cremona), may take Advanced Calculus (Williamson), Theory of Equations (Burnside and Panton), Determinants (Muir or Weld). Or, if they desire to pursue subjects more directly related to the physical sciences, they may take Dynamics (Williamson), Quaternions (Kelland and Tait), Differential Equations (Johnson).

In Physics courses are opened in the Mathematical Theory of Electricity and Magnetism, and in the Theory of alternating Currents.

In Engineering, Chemistry and Mining and Metallurgy, advanced work, both theoretical and practical, will be offered, the precise nature of it in each case to be fixed between student and Professor in view of the former's purpose.

ACADEMIC COURSE.

In compliance with an act of the General Assembly of 1895 an Academic course is maintained, in which is embraced that fundamental general education which should in part precede and in part accompany the pursuit of specific technical knowledge. The table that follows gives the studies, and the number of hours required in each, in the three years of the Academic course.

SCHEME OF ACADEMIC STUDIES.

FIRST YEAR.				SECOND YEAR.				THIRD YEAR.			
Terms.....	1	2	3	Terms.....	1	2	3	Terms.....	1	2	3
Elementary Alg .	5	5	5	Geometry	5	5	.	Higher Algebra ..	5	5	.
English I	5	5	5	German	3	3	5	Trigonometry.....	.	.	5
General History.	5	5	5	English Lit.....	.	5	5	German	5	.	.
Physiology.....	5	.	.	Physics .....	.	.	5	El. of Psychology.	.	.	3
Physical Geog....	.	5	5	Psychology.....	.	.	5	Political Econ....	5	.	5
				English History .	5	3	.	General Chem....	4	.	.
				Zoology.....	5	.	.	Logic.....	.	5	.
								Book-keeping			
								(optional).....	.	.	3
								Civil Government	.	.	5
								Gen'l Chem. Lab.	1	1	1
								Elective.....	.	5	5

E. THE AGRICULTURAL EXPERIMENT STATION.

This station was established by the act of Congress of 1887, and by the acts of the General Assembly of Missouri accepting its provisions. By the order of the Board of Curators of the University of the State of Missouri it is made a Department of the College of Agriculture.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations:

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each state or territory, established, or which may hereafter be established, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled "An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "Agricultural Experiment Station."

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different

stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

SEC. 3. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe.

It will be noted that the act of Congress of 1862 was designed to promote *Agricultural education*, while that of 1887 provides for *Agricultural investigation*.

The Station uses such parts of the College farm and equipment as are needed for experiments.

The results of experiments are given to the public in a series of bulletins, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and from 1 to 38 of the Station series, since its organization in 1888.

During the year seven Bulletins and an Annual Report were published, aggregating 240 pages, reporting the results of careful scientific experiments in the best methods of corn and potato growing, manures and fertilizers, insects injurious to fruit, Texas Fever, and the effect of the width of the tire on the draft of wagons.

Ten thousand copies of each were distributed free to the newspapers of the State and to the agricultural press, the libraries of colleges and high schools of the State, and to the leading farmers of this and adjoining states. In addition to the regular Bulletins of the Experiment Station, numerous Circulars of Information and Special Newspaper Bulletins have been published.

The experimental work has been greatly expanded and made more exact and scientific, keeping constantly in view, however, its practical and economic phases.

In agriculture investigations are now under way covering questions of maintenance of soil fertility; the renovation of worn-out soils; the most efficacious rotation of crops; comparison of green manure crops, forage crops, varieties of grains, grasses, potatoes, etc.; best methods of tillage for corn; effect of subsoiling and tile drainage; feeding experiments designed to ascertain the cheapest foods for pork and beef productions, and the cheapest method of wintering cattle.

In Horticulture about 400 named varieties of apples, 108 of plums, 120 of grapes, 28 of peaches, 10 of pears, 160 of strawberries and other fruits, are growing and being tested upon the Horticultural grounds. In addition, several hundred varieties of seedling strawberries, one-half of them the result of careful cross breeding of known parents, have been originated and are given promise of good results on the grounds. During the past year, seeds of hand-pollinated peaches and plums, and selected seeds and plants of promising types of native nuts, persimmons, papaws and other wild fruits have been planted. A collection of figs, Japanese persimmons and other foreign fruits and nuts, has been secured. The work of plant breeding will be continued with a view of obtaining varieties better adapted to our climatic conditions. The leading varieties of vegetables are tested as they come on the market.

Experiments in spraying with various mixtures for fungous diseases are carried on in a number of private orchards as well as on the Horticultural grounds. Experiments in pruning and grafting are in progress in the new orchards and in the vineyard. The various orchard trees and vines are observed for their pollinating characteristics and to see whether self or cross fertilization occurs in each variety. Methods of protecting tender buds are being tried. An experiment in breeding tomatoes is in progress.

The Entomological Department is conducting extensive experiments in the best methods of suppressing insects injurious to farm, garden, and orchard crops.

Extensive experiments with Texas Fever have been carried on by the Station in co-operation with the Missouri State Board of Agriculture and the Texas Experiment Station.

For further information concerning the College of Agriculture or the Experiment Station, address

H. J. WATERS,

Dean and Director,

Columbia, Mo.

OFFICERS OF THE EXPERIMENT STATION.

BOARD OF CONTROL:

The Curators of the University of the State of Missouri.

ADVISORY COUNCIL:

The State Board of Agriculture.

STATION STAFF.

THE PRESIDENT OF THE UNIVERSITY.....	
H. J. WATERS, B. S. A.....	Director
PAUL SCHWEITZER, Ph. D.....	Chemist
J. C. WHITTEN, B. S.....	Horticulturist
J. M. STEDMAN, B. S.....	Entomologist
J. W. CONNAWAY, M. D. C.....	Veterinarian
C. M. CONNER, B. S.....	Assistant in Agriculture
D. W. MAY, M. Agr.....	Assistant in Agriculture
N. O. BOOTH, B. Agr.....	Assistant in Horticulture
C. H. THOMPSON, B. S.....	Assistant in Botany
*A. E. HACKETT.....	Section Director Missouri Weather Service
IRVIN SWITZLER.....	Secretary
R. B. PRICE.....	Treasurer
C. L. WILLOUGHBY.....	Clerk and Stenographer

*In the service of the State Board of Agriculture.

VII. Graduate Department.

I. ACADEMIC DEPARTMENT.

Admission:

Graduates of either sex of this and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are received as students.

Teaching Fellowships:

Teaching Fellowships are annually established where such additional teaching force is required. Holders of these fellowships are required to teach five or six hours a week, and receive therefor \$200; and they are exempt from the payment of all fees and deposits. For further details, see page 27.

During the year 1896-97, fellowships were held in Latin, German, French, and Mathematics.

Graduate Club:

A club has been organized by the graduate students for the purpose of furthering their social and scholastic interests in the University and of bringing themselves into touch with graduate student life elsewhere. This club has joined the Federation of Graduate Clubs of the leading American Universities.

Degrees:

1. *The Master's Degree.*—Application for the Master's Degree in Arts, Letters or Science will be considered on the basis of one year's graduate study in the University. This year's study is understood to mean for teaching fellows at least eight (8) hours a week, for other students at least ten (10) hours a week throughout the scholastic year, or the full equivalent of such study. All courses may be taken from one general subject; at least half must be.

The majority of the courses must be from those offered for graduate students. No course open to undergraduates below the Junior year shall be counted for this degree.

A creditable thesis evincing capacity for original research and power of independent thought, in the line of the student's previous work, shall be submitted on or before May 1 of the given year.

The subject of the thesis and the courses chosen shall be laid before the Committee on Graduate Degrees on or before November 1 of each year.

At the close of the scholastic year the University Council may, on the report of this Committee, recommend to the Board of Curators for this degree such candidates as have satisfactorily fulfilled these conditions.

2. *The Doctor's Degree.*—For the attainment of the Doctorate no definite course is prescribed and no period of time is specified; but in general the candidate will be expected to spend at least three years, or if he have a Master's Degree, at least two years, in graduate study under University direction; but with the consent of the Faculty, one of these years may in either case be spent *in absentia*.

The candidate must have a Bachelor's degree in Arts, Letters, Science, or Philosophy, from some reputable University or College, and must attain in graduate study at this University a high proficiency in one branch of learning, and a respectable proficiency in at least one other. He must submit a dissertation embodying the results of original investigation, and must pass examination in his major and minor subjects.

Candidates who have satisfactorily met these conditions may be recommended for the Doctor's degree in the manner prescribed above for candidates for the Master's degree.

*COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Updegraff:

Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

• CLASSICAL ARCHÆOLOGY.

Professor Pickard:

1. Topography and Monuments of Athens. *Two hours a week.* Jahn's "Pausaniæ Descriptio Arcis Athenarum," and Schubart's text of Pausanias will be studied and interpreted in the light of the most recent excavations and publications. The disputed points of Athenian topography will be discussed, and the attempt will be made, with the aid of plans and photographs, to obtain as clear ideas as possible of both ancient and modern Athens.

2. Archæological Seminary. *Two hours a week.* A study of the description, explanation, and interpretation of works of Greek Art will be made. Both sculpture and vase paintings will be discussed, and important points in the history of Greek Art and Greek artists will be considered.

*Other courses of study offered among the Academic Studies (pages 57-74) are accepted as graduate in rank. For details, see announcements there.

ENGLISH.

Assistant Professor Penn:

1. Gothic and Old Saxon. *Three hours a week.* An introduction to Germanic philology, with special reference to English. The first semester is given to Gothic, the second to Old Saxon. Grammatical forms, phonology, and morphology of these languages are studied; the accompanying lectures discuss the characteristics of the Germanic dialects—Vowel correspondences, the first and second shiftings of consonants, the ablaut series, and the general laws of language development.

Professor Allen:

2. Beowulf. *Two hours a week.* This course includes: Translation of the poem, with criticism of the text, proposed readings, etc.; study of the grammar of Anglo-Saxon in its relation to precedent and subsequent stages of the language; Anglo-Saxon versification, etc. Questions of mythology, geography, early Germanic life, the genesis of poem, etc., are assigned for special study.

GEOLOGY.

Emeritus Professor Broadhead:

Course in Paleontology. *Twice a week.* (1) Fossils, their use, mineral composition, study of species and drawing of specimens. (2) Comparison of species. Geological History of certain organisms. Rise, culmination and decline of species. Varietal changes in different periods. Geologic and Geographic distribution of species. Why certain species are more abundant than others in certain strata.

Mr. Marbut:

Petrography. A course in rock Histology. Lectures and microscopic study of thin sections of rocks in the laboratory. *Three times a week.*

Open to students who have had courses 1, 4 and 5 (in Undergraduate Studies, page 71).

GERMANIC LANGUAGES.

Professor Hoffman:

1. Middle High German is offered in the *First semester*. Grammar; reading from Wolfram von Eschenbach: "Gahmuret und Herzeloide," "Parzival's Jugend und Eintritt ins Leben"—translation into good modern High German, noting changes in construction, phraseology, and meaning of words; with lectures on the literature of the period. *Three hours a week.*

2. German Literature of the Eighteenth and Nineteenth Centuries. This course continues through the first and second semesters. *Three hours a week.*

3. A course in Old High German is offered in the second semester: Braune's Grammatik & Lesebuch; reading various fragments, and a portion from Tatian Otfried, Notker & Williram's Lied; philological study in connection with it. *Three hours a week.*

GREEK.

Professor Manly :

(a) Seminary for advanced study. Minute study of one play of Euripides with private readings in Aeschylus and Sophocles.

Students desiring to take this work should give previous notice so that the necessary books may be had for them in time.

HISTORY AND POLITICAL ECONOMY.

Professor Hicks :

4a. Studies in Recent European Literature in Economics and Finance.

First semester, *two hours a week*.

6. Seminarium in Political Science. *Two hours a week*.

Acting Professor Loeb :

6. Seminarium in History. *Two hours a week*.

LATIN.

Professor Jones :

1. History of the Latin Language. *Twice a week, both semesters*. This course embraces a historical study of the sounds, inflections and syntax of Latin. It is taught wholly by lectures, but requires much collateral reading.

2. The Latin Seminary. The Latin Seminary is primarily intended for those students who expect to engage in teaching. It is composed of the Professor of Latin and such graduate students as are prepared to do the work. The work consists in the critical study of some author with reports, reviews and interpretations of select passages by the class. In 1897-8 Virgil will be studied. Three meetings a week will be held.

Assistant Professor Burnam :

1. Latin Paleography. *Twice a week throughout the year*. This course includes an account of books, their makers and materials in antiquity and the Middle Ages, and abundant practice in reading facsimiles of manuscripts.

2. Roman Public Law. *Three hours a week throughout the year*. This course is open only to students who have taken Undergraduate Course 10, with which it alternates. It will not be given in 1897-8.

MATHEMATICS.

Professor Tindall and Assistant Professor Defoe :

1. Differential Equations. The text used will be Johnson's Treatise on Differential Equations, with frequent reference to the admirable work of Forsyth. The treatment will embrace Ordinary Differential Equations of the first and second orders, Linear Equations with Constant and then with Variable Coefficients, Solutions in Series, Hypergeometric Series, the Solution of Riccati's, of Bessel's, and of Legendre's Equations.

2. **Modern Higher Algebra.** The text used will be *Cours D'Algebre Superieure* by Serret, with Salmon's *Higher Algebra* for reference. The subjects treated will be General Properties of Algebraic Equations, beginning with the treatment of the Complex Variable; Elimination, Symmetric Functions of the Roots, Resultants and Discriminants, Linear Transformation.

3. **Higher Plane Curves.** The text used will be Salmon's *Geometrie Analytique*, with frequent reference to the great work of Clebsch. The subjects treated will be Homogeneous Coordinates, General Properties of Plane Curves, Envelopes, Curves of the Third Order, Curves of the Fourth Order, Unicursal Curves.

4. **Theory of Functions.** This work will consist to a great extent of a course of lectures founded upon Klein's *Functionentheorie*, supplemented by work in Picard's *Traite D'Analyse*. The subjects will be a detailed treatment of the Complex Variable with its geometrical representation, Cauchy's Theorems, Singular Points of Functions, Surfaces of Riemann, study of Algebraic Functions and their Integrals. He has also paid much attention to the study of the Theory of the Potential. His associated work has been in Higher Plane Curves, using chiefly Clebsch; and in Higher Algebra, using Salmon and Serret.

5. **The Theory of the Potential.** The texts used will be Peirce's *Potential Function* and Duhem's *Mathematical Treatment of Electricite et Magnetisme*. The subjects treated will be Attraction, Theorem of Green, Lemmas of Gauss, Properties of the Potential, Surface Integrals, Electrical Distribution and the Solutions of the Problem of Dirichlet.

PHILOSOPHY.

Professor Thilly:

Modern Criticism. A study of the development of the critical problem in modern philosophy from the empirical side. Especial attention will be paid to Locke's *Essay concerning Human Understanding*; Berkeley's *Principles of Human Knowledge*, Hume's *Treatise on Human Nature*, and Kant's *Criticism of Pure Reason*. This course is open only to such students as have taken courses (1), (2), (3), and (4), described on page 65, and possess a good reading knowledge of French and German. *Three times a week for two semesters.*

PHYSICS.

Professor Lipscomb:

(a) **Laboratory.** Advanced Measurements and Special Investigations. Open only to those who have had Undergraduate Courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work. *Three to five times a week.* See page 69.

ROMANCE LANGUAGES.

Professor Weeks:

(1) **Old French.** Constan's *Chrestomathie*, with lectures. *M. F., at 10:30.* This course is open to Graduates properly qualified, and to any Senior who

has made a specialty of Romance Languages to the extent of having completed with high credit Undergraduate Courses 1, 2, 3 and 4, page 62. The epic poem, *Atiscans*, will be read, with close attention to the elements that enter into the poem, the object being to present to the student a practical illustration of text criticism.

(2b) Phonetics. A General Introduction to Philology. *W. F., at 4.* This course is one of general interest to students of Philology. The work consists of two parts: historical and practical. The practical work includes an effort to get at the production of speech-sounds from the physiological stand-point. Such works as Grandgent's *English and German Sounds* (Ginn & Co.) are used. Numerous tracings showing the action of the organs of speech are discussed.

II. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

SCHOOL OF AGRICULTURE.

For the degree of M. Agr., graduates of the College with the degree B. Agr. are required to take the Two Years' graduate course announced on page 111. The details of this course are arranged to suit the previous training of the candidates.

SCHOOL OF ENGINEERING.

Graduate work in Civil, Electrical, and Mechanical Engineering is offered at Columbia to those who have finished the undergraduate courses in these subjects with the degree of Bachelor of Science. Students that entering under these conditions have completed a year of Graduate work and passed satisfactory examinations thereon, and presented a thesis of real merit, will receive, according to the course in which they have studied, the degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), or Mechanical Engineer (M. E.)

See page 129.

III. DEPARTMENT OF LAW.

(a) One year of advanced work leading to the degree of LL. M.

This course is open to graduates of the Law department and of other law schools who have completed an equivalent course of study.

The object of the course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures, recitations and independent investigation on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence.

The student is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students such instruction.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations.

See page 84.

LIST OF STUDENTS.

Academic Department.

Name.	Course.	Postoffice.	County.
GRADUATES.			
Barnett, Mary Jessie, A. B. ....	.....	Columbia.....	Boone ●.....
Beasley, Geo. Hamilton, B. S. ....	.....	".....	".....
Brandon, Edgar Ewing, A. B. ....	.....	Marshall.....	Saline
Cauthorn, Edw. Beauford, C. E. ....	.....	Columbia.....	Boone
Christian, George Milton, A. M. ....	.....	Ashland.....	".....
Conley, Wm. Thompson, B. S. ....	.....	Columbia.....	".....
Daniels, Francis Potter, A. B. ....	.....	Ionia, Mich.....	.....
Gray, Louis Napoleon, B. L. ....	.....	Olean.....	Moniteau.....
Harris, Herman Fermain, A. B. ....	.....	Columbia.....	Boone
Hatton, John Harvey, A. B. ....	.....	Farmington, Ia..	.....
Herrleben, Henry.....	.....	Jamestown.....	Moniteau.....
Loeb, Clarence, A. B. ....	.....	Columbia.....	Boone
Mason, Elliott Jeffries, B. S. ....	.....	".....	".....
Riggs, Inez L., B. L. ....	.....	Farmer.....	Pike.....
Scott, John William, A. B. ....	.....	Canton.....	Lewis.....
Tindall, Mrs. Lula Gentry, B. L. ....	.....	Columbia.....	Boone
Turner, Ed., B. S., B. L., LL. B. ....	.....	Wellsville.....	Montgomery.....
UNDERGRADUATES.			
SENIOR CLASS.			
Alexander, William Campbell.....	B. L.	St. Charles.....	St. Charles..
Barth, Irvin Victor.....	A. B.	Columbia.....	Boone.....
Cochel, Wilber Andrew.....	"	".....	".....
Conran, James Francis.....	B. L.	High Hill.....	Montgomery
Dowdall, Guy Grigsby.	"	Quincy, Ill.....	.....
Edwards, Granville Dennis.....	A. B.	Hamilton.....	Caldwell.....
English, George Harrison, Jr....	"	Kansas City.....	Jackson
Fast, Judson Cooper.....	B. L.	Sedalla.....	Pettis.....
Hatton, Claudia May.....	B. S.	Columbia.....	Boone
Hitch, Arthur Martin.....	A. B.	Cuba.....	Crawford
Hunker, George Henry.....	B. S.	Roanoke.....	Randolph.....
McAlester, Andrew Walker.....	B. L.	Columbia.....	Boone
McGaugh, Elmer T.....	"	Richmond	Ray.....
McIntyre, Joe Shelby.....	"	Mexico.....	Audrain
Munday, Bert.....	B. S.	Canton	Lewis.....
Myer, Max Washington.....	A. B.	Salisbury.....	Charlton.....
Newman, Thomas Jefferson.....	B. L.	Mt. Vernon.....	Lawrence.....
Organ, Minnie Katherine.....	"	Salem	Dent
Price, Charles Sterling.....	"	Columbia.....	Boone
Pringle, Edward Graves.....	A. B.	Foristell.....	St. Charles.....
Riphey, John Dennis.....	"	Lawson	Ray.....
Rogers, Lalla Rookh.....	B. L.	Kingston.....	Caldwell
Sears, Eleanor Phidella.....	B. S.	Barnett.....	Morgan.....
Smith, Hugh Allison.....	B. L.	Coale.....	Henry.....
Strong, Charles Monroe.....	"	Stotesbury.....	Vernon.....
Swearengen, Ethel Barton.....	A. B.	Nevada.....	".....
Turner, Charles William.....	B. L.	Hale.....	Carroll.....

Name.	Course.	Postoffice.	County.
Weatherby, Everett Pine.....	A. B.	Columbia.....	Boone.....
Weatherby, James Edward....	B. S.	".....	".....
White, James Paul.....	A. B.	".....	".....
Wilkerson George Rappeen....	B. L.	Sedalia.....	Pettis.....
Zwick, Galins Lawton.....	"	Bucklin.....	Linn.....
—32			
JUNIOR CLASS.			
Adams, George Paul.....	B. L.	King City.....	Gentry.....
Alexander, Susan.....	"	Kingston.....	Caldwell.....
Ammerman, Gertrude.....	A. B.	Columbia.....	Boone.....
Banks, John Samuel.....	B. L.	".....	".....
Barnes, Charles Merline.....	"	New Madrid.....	New Madrid.....
Bennett, William Hall.....	A. B.	Mound City.....	Holt.....
Blackwell, Laura Craig.....	"	Columbia.....	Boone.....
Blair, Jessie.....	B. L.	Sedalia.....	Pettis.....
Botts, Lena Chattau.....	"	Columbia.....	Boone.....
Bush, Aubrey Charles.....	"	".....	".....
Cannell, Edward.....	B. S.	Hatton.....	Callaway.....
Carroll, Stephen Samuel.....	A. B.	Columbia.....	Boone.....
Cash, William Shotwell.....	B. L.	Ashley.....	Pike.....
Conley, Dudley Steele.....	"	Columbia.....	Boone.....
Dewey, Charles Edward.....	A. B.	Jefferson City.....	Cole.....
Durham, Lisbon Elwood.....	B. L.	Elston.....	".....
Freudenberger, Norman.....	A. B.	Clarksburg.....	Moniteau.....
Geiger, Harry Valter.....	B. L.	Rich Hill.....	Bates.....
Gerig, John Lawrence.....	A. B.	Columbia.....	Boone.....
Gray, Felix Zallie.....	"	Santa Fe.....	Monroe.....
Harrison, Cora.....	"	Bethany.....	Harrison.....
Hegnauer, Leonard, Jr.....	B. S.	Prairie City.....	Bates.....
Henderson, Cicero Adolphus...	B. L.	Paris.....	Monroe.....
Hock, William Casper.....	"	Buckner.....	Jackson.....
Holman, Thomas.....	B. S.	Anutt.....	Dent.....
Huggins, George Elsworth.....	B. L.	Lamar.....	Barton.....
Jackson, Clarence Martin.....	B. S.	Martinstown.....	Putnam.....
Knepper, Martha Myrtle.....	B. L.	Guy.....	Atchison.....
McFarland, Marlon.....	A. B.	Monroe City.....	Monroe.....
McMahan, William Tatom.....	B. L.	Seymour.....	Webster.....
Major, John William McGarvey	A. B.	Blackburn.....	Saline.....
Miller, Camille Maud.....	A. B.	St. Joseph.....	Buchanan.....
Perkins, Madison Love.....	B. L.	Mountain Grove.....	Wright.....
Perrine, Leroy Levi.....	B. S.	Lamar.....	Barton.....
Perry, Thomas Benton.....	"	Carthage.....	Jasper.....
Phillips, Murray, Jr.....	A. B.	New Madrid.....	New Madrid.....
Powell, Bessie.....	B. L.	Columbia.....	Boone.....
Rautenstrauch, Irvin.....	A. B.	Sedalia.....	Pettis.....
Riley, Lottie Marie.....	B. L.	Columbia.....	Boone.....
Russell, Antoine Edward.....	A. B.	Spokane, Wash..	.....
Spohrer, Frank Otto.....	B. S.	Fredericksburg..	Gasconade.....
Strange, Pliny Robinson.....	A. B.	Ashland, Ore.....	.....
Switzler, Royall Hill.....	"	Columbia.....	Boone.....
Walker, Nellie.....	"	St. Joseph.....	Buchanan.....
Williams, Horace Beckley.....	"	Dallas, Tex.....	.....
Wilson, William Frank.....	"	Cape Girardeau..	Cape Girardeau..
—46			
SOPHOMORE CLASS.			
Alexander, Emmet Gerald.....	A. B.	Blackburn.....	Saline.....
Bailey, Frank Meeker.....	B. S.	Warrensburg.....	Johnson.....
Beazley, Arthur Perry.....	"	Columbia.....	Boone.....
Bell, Charles Thomas.....	A. B.	Barnard.....	Nodaway.....
Brandenberger, Jacobina.....	B. S.	Linneus.....	Linn.....
Campbell, Laura Belle.....	A. B.	Columbia.....	Boone.....
Campbell, Philip Leonidas.....	B. L.	Goliad, Texas....	.....
Cleary, Charles Fred Elijah....	A. B.	Chillicothe.....	Livingston.....
Creason, Goodwin.....	B. L.	Columbia.....	Boone.....
Crump, Rosa Delcena.....	"	Lancaster.....	Schuyler.....
Dimmitt, Philip Vaughn.....	B. S.	Shelbyville.....	Shelby.....
Dix, Mary Blanche.....	B. L.	Jefferson City....	Cole.....
Edmonds, Raymore Saufley....	"	Miami.....	Saline.....

Name.	Course.	Postoffice.	County.
Edwards, John Crockett.....	B. L.	Centralia.....	Boone.....
Fewsmith, Stella.....	A. B.	Columbia.....	".....
French, Wilbur Manard.....	B. L.	Payette, Idaho...	".....
Freudenberger, Henry.....	"	Clarksburg.....	Moniteau.....
Glinings, Robert Meade.....	"	Kirksville.....	Adair.....
Gladney, Franklin Young.....	A. B.	Auburn.....	Lincoln.....
Gordon, Daisy Lonore.....	B. S.	Columbia.....	Boone.....
Greer, Bertha Alice.....	A. B.	Joplin.....	Jasper.....
Guffey, Don Carlos.....	B. S.	Unionville.....	Putnam.....
Hall, Judson Holmes.....	"	Sedalia.....	Pettis.....
Harshe, Robert Bartholow.....	B. L.	Columbia.....	Boone.....
Hawkins, Richmond Laurin....	A. B.	".....	".....
Highley, Mont Frederick.....	B. L.	Farmington.....	St. Francois.....
Houck, Giboney.....	A. B.	Cape Girardeau..	Cape Girardeau..
House, Ralph Emerson.....	B. L.	Columbia.....	Boone.....
Howard, Ida Elizabeth.....	"	".....	".....
Howard, Thomas Perry.....	A. B.	Parshley.....	Jasper.....
Huffman, Carl.....	B. L.	Caruthersville...	Pemiscot.....
Jenkins, Charles Oscar.....	"	Spring Garden...	Miller.....
Johnson, Elnora.....	B. S.	Maitland.....	Holt.....
Kline, May.....	B. L.	Bismarck.....	St. Francois.....
Leavenworth, George.....	B. S.	Ste. Genevieve...	Ste Genevieve...
Lockwood, Bart Marshall.....	B. L.	Rockport.....	Atchison.....
Lowen, Archer Hamilton.....	B. S.	Trenton.....	Grundy.....
Lucas, William Caldwell.....	A. B.	Osceola.....	St. Clair.....
McFarland, Byron.....	"	Monroe City.....	Monroe.....
March, Allen Wright.....	B. L.	Hallsville.....	Boone.....
*Miles, Woodward Morris.....	A. B.	Union City, Tenn.	".....
Miller, Herman Benjamin.....	B. L.	Canton.....	Lewis.....
Miller, Harriet Neely.....	A. B.	St. Joseph.....	Buchanan.....
Moore, Ada May.....	B. L.	Perry.....	Ralls.....
Moore, Ida Desha.....	"	Bunker Hill.....	Lewis.....
Naylor, George Washington....	"	Maud.....	Shelby.....
Packard, John Erastus.....	A. B.	Columbia.....	Roone.....
Parkhurst, Charles Leonard...	B. S.	Sweet Springs...	Saline.....
Potter, Peter.....	"	Springfield.....	Greene.....
Riggs, Lena.....	"	Farmer.....	Pike.....
Robertson, George Gordon.....	A. B.	Cuba.....	Crawford.....
Salmon, Merritt Kimbrough...	"	Clinton.....	Henry.....
Seward, William.....	"	Oak Ridge.....	Cape Girardeau..
Sexton, Floyd.....	B. L.	Columbia.....	Boone.....
Shipley, Sylvanus Carl.....	B. S.	".....	".....
Shouse, Jouett H.....	A. B.	Mexico.....	Audrain.....
Sinclair, Elizabeth May.....	B. L.	Columbia.....	Boone.....
Smith, Clyn.....	B. S.	Collins.....	St. Clair.....
Smith, George Alexander.....	B. L.	Columbia.....	Boone.....
Stone, Frank Powell.....	"	Macon.....	Macon.....
Utley, Lee.....	"	Miami.....	Saline.....
Walmsley, John Fletcher.....	A. B.	Sedalia.....	Pettis.....
Williams, Clyde.....	B. L.	Grubville.....	Jefferson.....
Wolz, Maria.....	B. S.	Trenton.....	Grundy.....
Wulfert, Margaret Anne.....	B. L.	Columbia.....	Boone.....
Young, William Wilson.....	A. B.	Lexington.....	Lafayette.....

—46

FRESHMAN CLASS.

Anderson, John Lewis.....	A. B.	Columbia.....	Boone.....
Arnold, Mercer.....	B. L.	Joplin.....	Jasper.....
Barlow, Gilbert.....	A. B.	Bethany.....	Harrison.....
Barnes, Clarence Abel.....	B. L.	Mexico.....	Audrain.....
Bass, Hugh Glenn.....	A. B.	Columbia.....	Boone.....
Bassett, Arthur.....	"	Paris.....	Monroe.....
Bissett, Clyde Algnier.....	B. S.	Springfield.....	Greene.....
Blake, Maxwell.....	B. L.	Kansas City.....	Jackson.....
Bland, William Franklin.....	"	King City.....	Gentry.....
Brandon, Ernest Coe.....	B. S.	Sedalia.....	Pettis.....
Brandt, Arnold Louis.....	"	Warrenton.....	Warren.....
Brashear, Ida Beulah.....	B. L.	Kirksville.....	Adair.....

*Left before matriculating.

Name.	Course.	Postoffice.	County.
Briscoe, Edward Andrew.....	B. S.	Tipton.....	Moniteau.....
Burruss, Will Bledsoe.....	B. L.	Columbia.....	Boone.....
Caldwell, Edward Guerrant....	"	Slater.....	Saline.....
Camron, Elisha Frank, Jr.....	"	Nevada.....	Vernon.....
Carroll, James Edward.....	A. B.	St. Louis City....	.....
Coffing, Lucas Riley.....	B. S.	Columbia.....	Boone.....
DeBolt, Edith Laurestine..	B. L.	Trenton.....	Grundy.....
Delster, John Louis.....	A. B.	Harlem.....	Clay.....
Doyle, Harrison Sisson.....	B. S.	Sedalia.....	Pettis.....
Edmondson, George Archibald.	"	Mexico.....	Audrain.....
Eitzen, Meta Theresa.....	"	Washington.....	Franklin.....
Fast, Carl Frederick.....	A. B.	Sedalia.....	Pettis.....
Fisher, Mary McFarlane.....	B. L.	Columbia.....	Boone.....
Fugitt, Reuben William.....	"	Carthage.....	Jasper.....
Fugitt, Olive Katherine.....	"	".....	".....
Gardner, Preston Edwin.....	"	Nevada.....	Vernon.....
Gerig, Rosalie.....	A. B.	Columbia.....	Boone.....
Goodson, Paul.....	B. L.	Carrollton.....	Carroll.....
Gray, Chester Harold.....	"	Columbia.....	Boone.....
Gray, Daniel Thomas.....	"	".....	".....
Gray, Mary.....	"	".....	".....
Grimes, Dallas Polk.....	"	Hemple.....	Clinton.....
Guitar, Emily.....	"	Columbia.....	Boone.....
Hall, Nora Keith.....	"	".....	".....
Hall, John Chappellear.....	B. S.	Marcelline.....	Linn.....
Halliburton, Westley.....	B. L.	Carthage.....	Jasper.....
Halterman, Adrain Guy.....	B. S.	Mt. Vernon.....	Lawrence.....
Hardy, Joseph Bryant.....	"	Waterloo, Ill.....	.....
Haverstick, Edward Everett....	B. L.	House Springs....	Jefferson.....
Hockaday, Charles Ernest.....	A. B.	Belton.....	Cass.....
Hunter, Lewis Linn.....	"	Benton.....	Scott.....
Jones, Duke William Edward..	B. L.	Rich Hill.....	Bates.....
Kirkpatrick, Harry Everett....	B. S.	Newcomer.....	Chariton.....
Lockwood, Helen Marie.....	"	Rockport.....	Atchison.....
McAlester, Berry.....	A. B.	Columbia.....	Boone.....
McMillan, Paul Duncan.....	B. S.	Maryville.....	Nodaway.....
McReynolds, Allen.....	B. L.	Carthage.....	Jasper.....
Marbut, Annas.....	B. S.	Purdy.....	Barry.....
March, John Goodson.....	A. B.	Hallsville.....	Boone.....
Moore, John Beech.....	B. L.	Oran.....	Scott.....
Moore, William Dunn.....	A. B.	St. Louis City....	.....
Moore, Henry Stephen.....	"	Oran.....	Scott.....
Northcutt, Lewis.....	B. S.	Saverton.....	Ralls.....
Oliver, Mary Margaret.....	"	Brown's Station.	Boone.....
Packard, Eva Lorena.....	"	Cameron.....	Clinton.....
Paul, Rolla Samuel.....	B. L.	Moberly.....	Randolph.....
Risley, Chester Howard.....	B. S.	Cameron.....	Clinton.....
Robertson, Gay Aufrecht.....	B. L.	Cuba.....	Crawford.....
Robinson, Clark.....	"	Columbia.....	Boone.....
Rogers, Thomas Hamilton.....	A. B.	Jefferson City....	Cole.....
Ruffner, Charles Shumway.....	B. L.	Palmyra.....	Marion.....
Sawyer, Samuel Page.....	"	Lexington.....	Lafayette.....
Schafer, Frederic Charles.....	"	Lancaster.....	Schuyler.....
Scudder, William Russell....	A. B.	Liberty.....	Clay.....
Sedgwick, Frank Lee.....	B. L.	Lamar.....	Barton.....
See, Edward Everett.....	B. S.	Montgomery City	Montgomery.....
Selbert, Daniel Glenn.....	"	Jackson.....	Cape Girardeau..
Shipley, Edith.....	A. B.	Columbia.....	Boone.....
Steele, Mary Isabel.....	B. S.	Ladonia.....	Audrain.....
Stephens, James L.....	A. B.	Columbia.....	Boone.....
Stephens, Hugh.....	"	".....	".....
Stewart, William Brown.....	B. L.	Moberly.....	Randolph.....
Strickler, Nana.....	B. S.	Columbia.....	Boone.....
Summerville, Robert Oscar....	B. L.	Chillicothe.....	Livingston.....
Switzler, WinF.....	A. B.	Columbia.....	Boone.....
Tuttle, Floyd Wilkins.....	"	".....	".....
Vaughan, Benjamin Warren....	B. S.	Urbana.....	Dallas.....
Watson, Sallie Elliott Ashley..	A. B.	Webster Groves..	St. Louis.....
Wilcoxon, Thomas Hurley.....	B. L.	Ashley.....	Pike.....

Name.	Course.	Postoffice.	County.
SPECIAL STUDENTS.			
Allen, Mary Swepson.....	B. L.	Columbia.....	Boone.....
Belden, Henry Marvin.....		Springdale, Conn.....	
Burruss, Frank McElroy.....		Columbia.....	Boone.....
Bush, Zenna.....	B. L.	Van Alstyne, Tex.....	
Davis, Almeda.....	B. L.	Sheldon.....	Vernon.....
Davis, Aubrey Wilton.....	B. L.	Shelbyville.....	Shelby.....
Depee, Emma.....		Greenfield.....	Dade.....
Dinsmoor, Mrs. Laura Brashear.....		Columbia.....	Boone.....
Farmer, Martin.....		Farmer.....	Pike.....
Ferrel, John Dade.....		Garden City.....	Cass.....
Gwinn, Arthur.....		Sprague.....	Bates.....
Haggard, Beverly Price.....		Columbia.....	Boone.....
Hewitt, Elijah William.....		Bethel.....	Shelby.....
Higdon, Robert Absalom.....		Clifton City.....	Pettis.....
Hockaday Josephine B.....		Columbia.....	Boone.....
Jellison, Daisy.....	B. L.	Hannibal.....	Marion.....
Jesse, Mrs. Addie Polk.....		Columbia.....	Boone.....
Jones, Mrs. Clara Thompson.....		".....	".....
Linthicum, Daniel Anthony.....		Helena, Ark.....	
Long, Laura Virginia.....		Columbia.....	Boone.....
Mumford, Mrs. Jes. Kennedy.....		".....	".....
Owings, Emilee Brown.....		Fayette.....	Howard.....
Penn, Mrs. Helen Hale.....		Columbia.....	Boone.....
Phillips, Mrs. Bes. Beauchamp.....		Leesburg, Fla.....	
Pippin, Bland Nixon.....		Waynesville.....	Pulaski.....
Price, Mrs. Mary Lakenan.....		Columbia.....	Boone.....
Rippey, Jessie Maud.....	A. B.	".....	".....
Tannehill, Maud Esther.....	A. B.	Amarilla, Tex.....	
Thompson, Guy Atwood.....		Pattonville.....	St. Louis.....
Tindall, Mrs. Lula Gentry.....		Columbia.....	Boone.....
Todd, Laetitia.....	A. B.	".....	".....
Turpin, Mary.....		".....	".....
Updegraff, Mrs. Alice M. Lamb.....		".....	".....
Weeks, Mrs. Mary Arnoldia.....		".....	".....
West, Marion.....		Somerville, Mass.....	
Whitten, Mrs. Nora Todd.....		Columbia.....	Boone.....
IRREGULAR STUDENTS.			
Allison, Milton.....	B. S.	Marshall.....	Saline.....
Atkinson, Julia Ferguson.....	B. L.	Jonesburg.....	Montgomery.....
Doty, Augustus Henry.....	B. S.	Jamesport.....	Davies.....
Kahn, Gussye.....		St. Joseph.....	Buchanan.....
Snyder, Robert McClure, Jr.....	B. L.	Kansas City.....	Jackson.....
Woody, Nellie Fly.....	A. B.	Cape Girardeau.....	Cape Girardeau.....

-36

-6

Normal Department.

Name.	Postoffice.	County.
Barnes, Charles Merline...	New Madrid.....	New Madrid.....
Beazley, Arthur Perry.....	Columbia.....	Boone.....
Bell, Charles Thomas.....	Barnard.....	Nodaway.....
Blackwell, Laura Craig.....	Columbia.....	Boone.....
Conran, James Francis.....	High Hill.....	Montgomery.....
Fugitt, Reuben William.....	Carthage.....	Jasper.....
Fugitt, Olive Katherine.....	".....	".....
Gray, Felix Lallie.....	Santa Fe.....	Monroe.....
Haverstick, Edward Everett.....	House Springs.....	Jefferson.....
Hitch, Arthur Martin.....	Cuba.....	Crawford.....
Hock, William Casper.....	Buckner.....	Jackson.....
Huggins, Gurry Elsworth.....	Lamar.....	Barton.....
Hunker, George Henry.....	Roanoke.....	Randolph.....
Jellison, Daisy.....	Hannibal.....	Marion.....

Name.	Postoffice.	County.
Jenkins, Charles Oscar.....	Spring Garden.....	Miller.....
Johnson, Elnora.....	Maitland.....	Holt.....
Kahn, Gussye.....	St. Joseph.....	Buchanan.....
McIntyre, Joe Shelby.....	Mexico.....	Audrain.....
Manring, John Franklin.....	McFall.....	Gentry.....
Organ, Minnie Katherine.....	Salem.....	Dent.....
Owen, Jesse Mordica.....	Fulton.....	Callaway.....
Packard, Eva Lorena.....	Cameron.....	Clinton.....
Riggs, Lena.....	Farmer.....	Pike.....
Riley, Lotta Maria.....	Columbia.....	Boone.....
Rogers, Lalla Rookh.....	Kingston.....	Caldwell.....
Schafer, Frederic Charles.....	Lancaster.....	Schuyler.....
Sears, Eleanor Phidelia.....	Barnett.....	Morgan.....
Strange, Pliny Robinson.....	Ashland, Oregon..	.....
Strickler, Nana.....	Columbia.....	Boone.....
Strong, Charles Monroe.....	Stotesbury.....	Vernon.....
Swearingen, Ethel Barton.....	Nevada.....	.....
Turner, Charles William.....	Hale.....	Carroll.....
Watson, Sallie Elliott Ashley.....	Webster Groves...	St. Louis.....

—33

TEACHERS' COURSE.

Berry, Alleen Virginia.....	Columbia.....	Boone.....
Berry, James Antonia.....	Fulton.....	Callaway.....
Burrus, Olney.....	Grain Valley.....	Jackson.....
Cheesman, Alonzo.....	Bogard.....	Carroll.....
Clinard, Elisa.....	Stokley.....	Pettis.....
Davis, Thomas Smith.....	Eurka Spgs., Ark.	.....
Dyer, Fordyce N.....	Amity.....	Caldwell.....
Fowler, Effie Leona.....	Slater.....	Saline.....
Harlow, Victor Emanuel.....	Argentville.....	Lincoln.....
Jamison, Mary Elizabeth.....	Columbia.....	Boone.....
Jennings, William Olin.....	.....	.....
Meyers, Nora.....	Jefferson City.....	Cole.....
Mitchell, Eugene Tinsley.....	Cairo.....	Randolph.....
Moyer, Charley Edmond.....	Cookville.....	Pulaski.....
Oliver, Elizabeth.....	Sturgeon.....	Boone.....
Owen, May Soplah.....	Fulton.....	Callaway.....
Shannon, Ada.....	Salisbury.....	Chariton.....
Shipe, Ida Olive.....	Columbia.....	Boone.....
Smith, Burton Lee.....	Troy.....	Lincoln.....
Smith, Katherine Elizabeth.....	White's Store.....	Howard.....
Sweet, Arthur T.....	Curryville.....	Pike.....
Swink, Lida May.....	Festus.....	Jefferson.....
Watt, George.....	Bosworth.....	Carroll.....
Wulfert, Amelia Pauline.....	Columbia.....	Boone.....

—24

Law Department.

Name.	Postoffice.	County.
SENIOR.		
Adams, Arthur Nottingham.....	Buckner.....	Jackson.....
Asbury, Al Edgar, Jr.....	Higginsville.....	Lafayette.....
Barnett, George Harlan.....	Columbia.....	Boone.....
Bell, Fleetwood.....	.....	.....
Bonenkamp, William Louis.....	Fayetteville, Ill..	.....
Bond, Refard.....	Minco, Ind. Ter..	.....
Booth, George Frederick.....	DeSoto.....	Jefferson.....
Bryan, William Alexander.....	Brookfield.....	Linn.....
Covert, Charles Elmer.....	Houston.....	Texas.....
Crowley, George Washington.....	Lawson.....	Ray.....
Dora, Robert Linton.....	Charleston, Ill....	.....
Duley, Elsus Enoch.....	Ashland.....	Boone.....

Name.	Postoffice.	County.
Elam, Oscar Berton.....	Lamar.....	Barton.....
Elliott, George Nathan.....	Elsberry.....	Lincoln.....
Emerson, H. Grant.....	Hatfield.....	Harrison.....
Evans, George Albert.....	Golden City.....	Barton.....
Ferguson, Frederic Kirkwood.....	Paola, Kan.....	.....
Gatewood, William Orlen.....	Skinner.....	Audrain.....
Gordon, James Allen.....	Plattsburgh.....	Clinton.....
Gottschalk, Max William.....	St. Louis City.....	.....
Graves, Charles Herbert.....	Nevada.....	Vernon.....
Gray, George Leslie.....	Columbia.....	Boone.....
Gwinn, Arthur.....	Sprague.....	Bates.....
Hall, Charles Ripley.....	Harrisonville.....	Cass.....
Hanger, Rob Roy.....	Clarence.....	Shelby.....
Hastain, Ed.....	Appleton City.....	St. Clair.....
Hawkins, William Carroll.....	Brumley.....	Miller.....
Henkins, Joseph Adam.....	Kingston.....	Caldwell.....
House, Jesse Eugene.....	Columbia.....	Boone.....
Hughes, George McLaughlin.....	Talequah, I. T.....	.....
Jarvis, Robert Earle.....	Moberly.....	Randolph.....
Jennings, George Washington.....	Lee's Summit.....	Jackson.....
Key, William Casey.....	Nevada.....	Vernon.....
Kimmel, Karl.....	Leavenworth, Kas.....	.....
Kraemer, Herman.....	California.....	Moniteau.....
Livingstone, John Alexander.....	Cameron.....	Clinton.....
McAlester, James Burney.....	McAlester, I. T.....	.....
McNeely, John Dowd.....	St. Joseph.....	Buchanan.....
Manring, John Franklin.....	McFall.....	Gentry.....
Michelson, Lionel Anselm.....	St. Joseph.....	Buchanan.....
Moore, Otho Clay.....	Clarksburg.....	Moniteau.....
Murry, Harvey Dennie.....	Brown's Station..	Boone.....
Ostergard, Martin Jackson.....	Kansas City.....	Jackson.....
Owen, Theodore Clarence.....	Fristoe.....	Benton.....
Pemberton, Morton Hord.....	Fulton.....	Callaway.....
Potter, James Louis.....	Clifton City.....	Cooper.....
Rieger, James Edward.....	Kirksville.....	Adair.....
Roberts, Robert Edwin.....	Richmond, Ky.....	.....
Rooney, Robert Emmet.....	Kansas City.....	Jackson.....
Searcy, Lemuel Thomas.....	Columbia.....	Boone.....
Sinnett, Harold Blanchard.....	Sedalia.....	Pettis.....
Steltemeler, Fred Casper.....	St. Louis City.....	.....
Swearingen, Orson Hansford.....	Kansas City.....	Jackson.....
Swink, Robert Augustus.....	Festus.....	Jefferson.....
Taylor, Jesse Hayden.....	St. Paul, Minn.....	.....
Timmonds, Harry Whitney.....	Lamar.....	Barton.....
Tompkins, Will Eugene.....	Boonville.....	Cooper.....
Wheeler, Sydney Johnson.....	Miami.....	Saline.....
Wilkinson, Robert Edward.....	Dundee.....	Franklin.....
Williams, Albert Jefway.....	Pattonsburg.....	Daviss.....
Williams, William Detmer.....	".....	".....
Winter, John P.....	St. Lucas, Iowa.....	.....
Wood, Stuart Monroe.....	Macon.....	Macon.....
Woods, Richard Harry.....	Versailles.....	Morgan.....
Woods, Frank Tipton.....	Woodlawn.....	Monroe.....
—65.		
JUNIOR CLASS.		
Baker, John Thomas.....	Gant.....	Audrain.....
Bente, Charles William.....	Otterville.....	Cooper.....
Blanton, David Anderson.....	Columbia.....	Boone.....
Booher, Lloyd Webster.....	Savannah.....	Andrew.....
Bridgman, Richard Balden.....	Bigelow.....	Holt.....
Briscoe, Philip Elias.....	Green Ridge.....	Pettis.....
Cashion, Gilbert Lawrence.....	Perryville.....	Perry.....
Catron, Edward M.....	Lexington.....	Lafayette.....
Cobb, Thomas Morris, Jr.....	".....	".....
Cramer, Floyd Bruce.....	Nevada.....	Vernon.....
Crawford, William Calvin.....	Wagoner.....	Cedar.....
Davis, Tilton.....	Lexington.....	Lafayette.....
Dow, Harvey Dill.....	Georgetown.....	Pettis.....

Name.	Postoffice.	County.
Dunham, Samuel S.....	Bevier.....	Macon
Duvall, Arthur.....	Butler.....	Bates.....
Fant, David Beard.....	Lamar	Barton
Graham, Milo Fowler.....	Richmond	Ray.....
Gumm, Eugene Payton.....	Odessa.....	Lafayette
Halstead, Samuel Reeves.....	Lawson.....	Ray.....
Hamilton, Edward Richard	Columbia.....	Boone.....
Harris, Clifford Burdette.....	Harris.....	Sullivan
Haydon, Curtis.	Deer Park.....	Boone.....
Higdon, Robert Absalom.....	Clifton City.....	Pettis.....
Hill, Adam.....	Independence.....	Jackson
Houston, James S. Montgomery.....	Raymore	Cass
Jones, Samuel Franklin.....	Mt. Vernon.....	Lawrence
Killam, Oliver Winfield.....	Winfield.....	Lincoln.....
Kirk, Robert Lawrence.....	Jefferson City.....	Cole.....
Kitt, Paul Duane.....	Chillicothe	Livingston.....
Klepper, Frank B.....	Polo.....	Caldwell
Lyons, Martin Peter.....	Shackleford	Saline
MacBride, John Leslie Ffenuell.....	Nevada.....	Vernon.....
McKnight, James C. L.....	Poor Fork, Ky.....	Putnam.....
Madden, Ira Gilbert.....	Powersville.....	Carroll.....
Mars, Frank Little.....	Carrollton	Boone.....
Mountjoy, Joseph Shannon.....	Columbia	Montgomery
Nebel, John Vincent.....	High Hill.....	Callaway.....
Owen, Jesse Mordecai.....	Fulton.....	Platte
Owsley, Henry Templeton.....	Platte City.....	Boone.....
Paxton, Charles Flagg.....	Centralla.....	Andrew
Phillips, Everett Eugene.....	Savannah.....	Marion.....
Plowman, John Lawrence.....	Hannibal.....	Monroe.....
Reynolds, John Randolph.....	Florida	Boone
Russell, Francis Hayden.....	Columbia	Lafayette.....
Ryland, Leonard Gamble.....	Lexington	Boone.....
Schwabe, James Web.....	Columbia	Jasper.....
Shepherd, Edward Lee.....	Joplin.....	Gentry.....
Shultz, Orrillis Edward.....	McFall.....	.....
Sidebottom, Earl Easley.....	Santa Fe, N. M.....	Ozark.....
Smith, Randall Evander	Almartha.....	.....
Smoke, Samuel Aaron.....	Fort White, Fla.....	.....
Stockslager, Roscoe Newell.....	Hailey, Idaho.....	.....
Thompson, Guy Atwood.....	Pattonville.....	St. Louis.....
Thurston, Walter Alonzo.....	Columbia	Boone
Tiedemann, John Earnest.....	Jackson.....	Cape Girardeau.....
Tomlinson, Robert Lee.....	Atchison, Kan. ....	.....
Townsend, John Rogers.....	St. Joseph.....	Buchanan.....
Turner, Martin Ernest.....	Columbia	Boone
Walkup, Frank Harvey.....	Sedalia	Pettis.....
Welles, Edmund La Pice.....	Columbia	Boone.....
White, Crawford Elder.....	"	"
Willhite, Joseph Vance.....	Oxford.....	Worth.....
Wright, Edgar Lee.....	Brown's Station.....	Boone
York, Minor Manasseh.....	Lapore, Tex .....	.....
SPECIAL.		-64
Buster, Charles Green.....	Bevier.....	Macon
Hausam, Adam.....	Stewartsville.....	De Kalb.....
Morgan, Charles Lafayette.....	Sarcoxi.....	Jasper.....
Soper, Frank.....	Liberty.....	Clay.....
		-4

Medical Department.

Alexander, Ralph Lee.....	Blackburn.....	Saline.....
Allen, Frank Withers.....	Barryville	Macon
Banks, Samuel Griffin.....	Columbia.....	Boone.....
Bass, Andrew Jackson.....	"	"
Benage, Otto.....	Iberia.....	Miller

List of Students

161

Name.	Postoffice.	County.
Benage, John Leslie.....	Iberia.....	Miller.....
Broderick, Daniel Edward.....	Kansas City.....	Jackson.....
Butman, Winthrop Warren.....	Macon.....	Macon.....
Clark, Manuel Thomas.....	Columbia.....	Boone.....
Coleman, Walter William.....	Foristell.....	St. Charles.....
Conover, Charles Clinton.....	Peculiar.....	Cass.....
Crowley, Claude Cuthbert.....	Lawson.....	Ray.....
Detweiler, Andrew Sackson.....	Washington.....	Franklin.....
Drake, Claire Ferdinand.....	Boonville.....	Cooper.....
Evans, Walter Emmett.....	Meadville.....	Linn.....
Evans, Edwin Elgin.....	".....	".....
Fisher, James Montgomery.....	Columbia.....	Boone.....
Fleming, John Bartley.....	Farmington.....	St. Francois.....
Gordon, Reverdy Johnson.....	Columbia.....	Boone.....
Harsell, Thomas Lightburne.....	Kearney.....	Clay.....
Hill, William Hickman.....	Independence.....	Jackson.....
Hockaday, Carl Vincent.....	Columbia.....	Boone.....
Holman, Jurney Hubert.....	Hartford.....	Putnam.....
Johnson, Hans Christian.....	Meadville.....	Linn.....
Lane, Hallie Hiram.....	Harrisonville.....	Cass.....
Lillard, Alonzo Conduit.....	Columbia.....	Boone.....
McClane, Jean Edward.....	".....	".....
McConnell, Talmage.....	Sedalia.....	Pettis.....
Marshall, Archie Maupin.....	Hager's Grove.....	Shelby.....
Martin, John Frederick.....	Ohio.....	St. Clair.....
Mikel, Henry Franklin.....	Columbia.....	Boone.....
Miller, Ira Hamilton.....	Louisiana.....	Pike.....
Norwood, Frank Henderson.....	Columbia.....	Boone.....
Parmer, Charles Chandler.....	".....	".....
Plitney, Orville.....	Moberly.....	Randolph.....
Reid, Robert Lee.....	Columbia.....	Boone.....
Reynolds, William Hamilton.....	Vermont.....	Cooper.....
Rothrock, Frank Blake.....	Richmond.....	Ray.....
Rutherford, Henry Holcomb.....	Ft. Smith, Ark.....	".....
Scrivener, Douglas Scott.....	Columbia.....	Boone.....
Shaefer, Harry Irving Lewis.....	".....	".....
Shaefer, William Rothwell.....	".....	".....
Stapp, Joseph Harvey.....	Morton.....	Ray.....
Stephens, Phil. Howard.....	Boonville.....	Cooper.....
Stouffer, Robert Walker.....	Napton.....	Saline.....
Tatum, Harry Erskine.....	Glasgow.....	Howard.....
Tilley, Robert Bruce.....	Waynesville.....	Pulaski.....
Trader, George Henry.....	Sedalia.....	Pettis.....
Turner, John William.....	Hallsville.....	Boone.....
Weir, Edward Francis.....	London, Canada.....	".....
Wolff, Lewis Gilmer.....	Shawnee Mound.....	Henry.....
Young, John Calvin.....	High Point.....	Moniteau.....

—52

College of Agriculture and Mechanic Arts.

A. SCHOOL OF AGRICULTURE.

Name.	Postoffice.	County.
FOURTH YEAR.		
Adams, Charles Frederick.....	Atherton.....	Jackson.....
Norton, John Henry.....	Greensburg.....	Knox.....
Sears, Alonzo James.....	Barnett.....	Morgan.....
THIRD YEAR.		
Lewelling, Walter William.....	High Hill.....	Montgomery.....
McDermott, Joseph Lewis.....	Buckner.....	Jackson.....
Shawhan, Thomas Redmon.....	Lone Jack.....	".....

—3

—3

Name.	Postoffice.	County.
SECOND YEAR.		
Conley, Abraham Harrison.....	Columbia	Boone
Evans, Seth Delency.....	Meadville.....	Linn
Kline, George Rennick.....	Bismarck	St. Francois.....
Knippenburg, Henry	Femme Osage.....	St. Charles.....
Maloney, John Cornellous.....	Cretcher.....	Saline.....
Roberts, Guy Alexander.....	St. Joseph.....	Buchanan.....
Welch, James William.....	Peace Valley.....	Howell.....
FIRST YEAR.		
Allen, Robert Riddick.....	Columbia.....	Boone
Bass, Lawrence Hood.....	"	"
Blanton, Harry Bain.....	"	"
Crouch, Andrew Monroe, Jr.....	"	"
Dunlap, Ellen Louise.....	Chillicothe	Livingston.....
Ferguson, Francis Augustin.....	Columbia.....	Boone
Hayes, Lottie	"	"
Howard, Walter Lafayette.....	Springfield.....	Greene
Jacques, William Raymond.....	"	"
Lapsley, Robert Jay VanCourt.....	Sweet Springs.....	Saline.....
Lipscomb, Millard Lewis, Jr.....	Columbia.....	Boone
Loeb, Leon.....	"	"
McConathy, Overton Fitch.....	Columbia	Boone ..
McGinnis, Francis Camp	Terrell, Texas .....	.....
Mott, George Elbert.....	Hampton, Iowa ..	.....
Newton, Ivie Wilmer.....	High Point.....	Moniteau.....
Palmer, Warren Auvinell	Highview	Lincoln.....
Pearcy, Claude Otis.....	Thornfield.....	Ozark.....
Pearcy, Elmer Edgerton.....	"	"
Powell, William Edward.....	Columbia	Boone.....
Pringle, John Harvey.....	Foristell.....	St. Charles.....
Tucker, Robert Wilson.....	Sedalia	Pettis.....
Van Trump, Pomeroy.....	Elmira.....	Ray.....
White, James David.....	Columbia.....	Boone.....
Winchester, Luther.....	Sikeston.....	New Madrid.....
Wood, William Edwin	Barry.....	Clay
SPECIAL.		
Evans, William Botts.....	Meadville.....	Linn
Storm, Julia Fannie.....	Kirksville.....	Adair.....
Willoughby, Claude Leake.....	Columbia.....	Boone.....
SHORT WINTER COURSE IN AGRICULTURE.		
Clarke, Wright.....	Jefferson City....	Cole
Elliott, William West.....	Windsor.....	Henry
Gruetzemacher, Edward Charles.....	St. Louis City.....	.....
Gruetzemacher, William Louis.....	" .....	.....
Holley, Robert Carl.....	Memphis	Scotland.....
Hunter, Howard Carroll.....	Louisiana	Pike.....
Kaesemacher, Gustave Charles.....	Pilot Knob.....	Iron
Lang, Oscar.....	Appleton.....	Cape Girardeau....
McMeekin, Joseph Murphy.....	Higginsville.....	Lafayette.....
McNew, Ellsworth.....	Cowgill.....	Caldwell.....
Maize, Jesse Emmitt.....	Happy Valley.....	Harrison
Mayer, Charles Edmund.....	Cookville.....	Pulaski.....
Orr, Alfred Harry.....	Salt Springs.....	Saline.....
Schuring, Herman Anton.....	Wein.....	Charlton.....
Sibbit, Charles Dick	Tindall	Grundy.....
Spannaus, Edward.....	Augusta.....	St. Charles.....
Stender, Robert Martin.....	St. Louis City.....	.....
Stiebel, Antoinette.....	" .....	.....
Turner, Alonzo.....	Hallsville	Boone.....
Wehrman, Louis	Truxton.....	Lincoln.....
Woodward, George Ditzler.....	McFall.....	Gentry.....

Name.	Postoffice.	County.
SHORT WINTER COURSE IN HORTICULTURE.		
Dunlap, Ellen Louise.....	Chillicothe.....	Livingston.....
Erwin, Arthur Thomas.....	Steedman.....	Callaway.....
Hoag, William Bert.....	Mountain Grove..	Wright.....
Park, Emma Janette.....	Springfield.....	Greene.....
Simmons, Philip.....	Macon.....	Macon.....
Stinson, John Turner, B. S.....	Fayetteville, Ark.	.....
Sylvester, Philip Knight.....	Osborn.....	DeKalb.....
Todd, Cad.....	Sedalia.....	Pettis.....
Van Trump, Pomeroy.....	Elmira.....	Ray.....
Wilkerson, Kelly Bridgeford.....	Santa Fe.....	Monroe.....
Winchester, Luther.....	Morehouse.....	New Madrid.....

-11

C. SCHOOL OF ENGINEERING.

Name.	Course.	Postoffice.	County.
SENIOR CLASS.			
Burkhart, Louis Hiawatha.....	M. E.	Columbia.....	Boone.....
Dunlap, Arthur Hoyt.....	C. E.	Miami.....	Saline.....
Lotter, Henry Howell.....	"	Moberly.....	Randolph.....
McMeekin, William Graves.....	"	Higginsville.....	Lafayette.....
Miller, William Alvin.....	"	Columbia.....	Boone.....
Rodhouse, Thomas Jacob.....	"	Mexico.....	Audrain.....
Rogers, Egbert Irvin.....	"	Cameron.....	Clinton.....
Stalkoff, George Roshlevsky...	E. E.	Columbia.....	Boone.....
JUNIOR CLASS.			
Broadhead, Garland Carr, Jr...	C. E.	Columbia.....	Boone.....
Cope, Walter Smalley.....	E. E.	Kingston.....	Caldwell.....
Cox, Elza Allison.....	C. E.	Rutledge.....	Scotland.....
Hansen, Karl Henry.....	E. E.	Halem.....	Clay.....
Hogan, Charles William, Jr....	"	St. Louis City.....	.....
Jones, Edward Horace.....	C. E.	Parnell.....	Nodaway.....
Lewis, Loyd.....	E. E.	Oregon.....	Holt.....
Marbut, Thomas Benton.....	C. E.	McDowell.....	Barry.....
Maughmer, Carl.....	"	Kearney.....	Clay.....
Moore, Frank Lawrence.....	"	Carthage.....	Jasper.....
Turner, Orville Hume.....	E. E.	Hallsville.....	Boone.....
Turner, William Henry.....	C. E.	Centralia.....	".....
Weakley, Floyd Lee.....	M. E.	Gowen.....	Clinton.....
SOPHOMORE CLASS.			
Brandt, Albert Upp.....	E. E.	Nevada.....	Vernon.....
Corrigan, George Washington...	C. E.	Harrisonville....	Cass.....
Forman, James Edwin.....	E. E.	Hannibal.....	Marion.....
Franz, Walter Godfrey.....	M. E.	St. Louis City.....	.....
Freudenberger, Wm. Kaiser...	E. E.	Clarksburg.....	Moniteau.....
Irvine, George Andrew.....	"	Marshall.....	Saline.....
Keith, Charles Whiteside.....	C. E.	St. Louis City.....	.....
Langford, Chatham Ewing.....	E. E.	Lexington.....	Lafayette.....
Maitland, George Forrest.....	C. E.	Richmond.....	Ray.....
Morris, James Washington.....	"	".....	".....
Morse, Henry Simmons.....	M. E.	Warrenton.....	Warren.....
Neville, Colonel Will Jackson...	C. E.	Marshall.....	Saline.....
Pinkley, Roy Henry.....	E. E.	Chillicothe.....	Livingston.....
Ragland, John Kelly.....	M. E.	Boonville.....	Cooper.....
Robinson, Ralph Waldo.....	E. E.	Kahoka.....	Clark.....
Rodgers, James Leigh.....	M. E.	Boonville.....	Cooper.....
Terrill, Adolphus Centimus....	C. E.	Macon.....	Macon.....

-17

Name.	Course.	Postoffice.	County.
FRESHMAN CLASS.			
Bickley, Ross Moore.....	M. E.	Mexico	Audrain
Blackwell, Paul Alexander.....	C. E.	Columbia	Boone.....
Bowen, Wilks.....	E. E.	Mt. Washn., Md..	.....
Daugherty, Bede Allen.....	C. E.	Leemon.....	Cape Girardeau..
Decker, Ernest William.....	E. E.	Jefferson City....	Cole.....
Gaines, Edward C.....	"	Slater.....	Saline.....
Gans, Roy Carl.....	"	Columbia	Boone
Garrett, Richard Montgomery.	C. E.	Sedalla.....	Pettis.....
Heck, Kirby Scott.....	E. E.	Columbia	Boone
Hill, Jo Lisle.....	M. E.	Independence ...	Jackson
Jeffries, Paul Burch.....	E. E.	Shaw.....	Boone
Lanning, John Henry.....	C. E.	Ste. Genevieve...	Ste. Genevieve...
Lyman, Forest Shepherd.....	E. E.	Westport	Jackson.....
Maclay, Edgar Glenn.....	C. E.	Tipton	Moniteau.....
Marshall, Urban Serenus.....	E. E.	St. Joseph.....	Buchanan.....
Melara, Policampo.....	C. E.	Juticalpa,	.....
		Cent. America..	
O'Rear, Lenoir Wilkes.....	E. E.	Columbia	Boone
Peper, Elmer Carl.....	"	St. Louis City....	.....
Shellenberger, Ira Oscar.....	"	Mound City.....	Holt.....
Underhill, Dillen.....	M. E.	Lineville, Ia.....	.....
Wilcox, Frank Leslie.....	E. E.	Columbia	Boone
Wilson, James Newton.....	M. E.	Molino.....	Audrain
Worley, John Stephen.....	C. E.	Odessa.....	Lafayette.....

—23

D. SCHOOL OF MINES.

Name.	Postoffice.	County.
SENIOR CLASS.		
Anderson, Perry Barton.....	Neosho	Newton.....
Cameron, John Simpson.....	Krebs, I. T.....	.....
Dean, George Walter.....	Elk Prairie	Phelps.....
Eardley, Albert Edward.....	Carrizo Spgs, Tex.	.....
Kersting, Felix	St. Louis City....	.....
Rogers, John.....	Bevier.....	Macon
Spengler, Albert.....	Kansas City.....	Jackson
Torrence, Leslie Clay.....	Pocahontas.....	Phelps.....
JUNIOR CLASS.		
Barker, Ralph.....	Chicago, Ill.....	.....
Beyer, Frank Bean.....	Philadelphia, Pa..	.....
Donnelly, Arthur Thomas.....	Rolla	Phelps
Gottschalk, Victor Hugo.....	St. Louis City ....	.....
Hendricks, James Otto.....	Bollivar.....	Polk.....
Larsh, Paul Armstrong.....	Neb. City, Neb....	.....
Lockridge, George William.....	Jamesport.....	Davless.....
Smith, George Washington.....	Rockford, Ill.....	.....
Terrell, Arthur Davis.....	Holden.	Johnson.....
Torrence, Euart Carl.....	Pocahontas.....	Cape Girardeau...
SOPHOMORE CLASS.		
Bowman, Wade Walbridge.....	Lebanon.....	Laclede.....
Cardenas, Francisco.....	Salinas Vict., Mex.	.....
Chamberlain, Santiago.....	Monterey, Mex....	.....
Clark, George Clough.....	Leadville, Colo....	.....
Coe, Herbert William.....	Kansas City.....	Jackson.....
Fernandez, Abraham.....	Monterey, Mex....	.....
Hatchett, Roger Hanson	New Florence.....	Montgomery.....
Illinski, Alexis Xaxler.....	East St. Louis, Ill.	.....

—8.

—10.

List of Students

165

Name.	Postoffice.	County.
Jamison, Claude Eagan	Rolla	Phelps
Leivy, Pasha Benjamin	East St. Louis, Ill. ....	.....
Lund, Albert Edward	White Oaks, N. M. ....	.....
Perkins, Edward Thompson	Kansas City	Jackson
Perkins, Fred. Hough	"	"
Rogers, Austin Flint	"	"
Rogers, Herbert Fordyce	Holden	Johnson
Schultze, Herman Otto	Vetschau, Ger. ....	.....
Soest, Walter Ernest	Rolla	Phelps
Tayman, Francis Joseph	Lebanon	Laclede
Underwood, Jerrold Roscoe	Kansas City	Jackson
Villareal, Francisco	Salinas Victoria, [Mexico] .....	.....
FRESHMAN CLASS.		—20
Bantley, Charles Herman	Lebanon	Laclede
Baughman, Claude Griffe	Rolla	Phelps
Bland, Harry Osmond	"	"
Cooney, Robert Emmett	Ft. Smith, Ark. ....	.....
Cope, Ralph Pope	Kingston	Caldwell
Diffenderfer, John Laughton	Lebanon	Laclede
Elizondo, Julian	Monterey, Mex. ....	.....
Fach, Charles Albert	St. Louis City .....	.....
Fayant, Clarence Howell	Lebanon	Laclede
Fraizer, Isaac Peter	Rolla	Phelps
Garcia, John Adrian	St. Louis City .....	.....
Graeser, Henry Jacob	Stratmann	St. Louis
Herndon, James Archibald	Lebanon	Laclede
Hull, John Stanley	Hamilton, O. ....	.....
Jurden, Ralph Louis	Holden	Johnson
Koeberlin, Frederick Richard	St. Louis City .....	.....
McComb, Ernest Hubert	Lebanon	Laclede
McCormick, William Roland	Gunnison, Colo. ....	.....
McLane, Robert	Oak Ridge	Cape Girardeau
Mitchell, Phelps	Rolla	Phelps
Niles, Claude Asa	"	"
Ollis, Frederick Weld	Springfield	Greene
Phariss, Bertie Lewis	Rolla	Phelps
Powell, Walbridge Henry	"	"
Regel, Ferdinand Hermann	St. Louis City .....	.....
Taylor, Howard	Lentner	Shelby
Tetley, William Robert	Farmington	St. Francois
Trotter, James	Carrollton	Carroll
Walker, Dix	Oak Ridge	Cape Girardeau
Weigel, William Melvin	Memphis, Tenn. ....	.....
Wesseler, William Julius	St. Louis City .....	.....
SPECIAL*.		—31
Beall, Sarah (Math.)	Kansas City	Jackson
Brown, Oliver W. (Met)	Indianapolis, Ind. ....	.....
[B. S., Earlham; A. M., Ind. Univ.]		
Chamberlain, Louis John (C)	Rolla	Phelps
Fort, Edward Long (A)	"	"
Green, Albert Edgar (A)	Chicago, Ill. ....	.....
Groves, Virgil Pitzer (Min.)	Springfield	Greene
Hanley, John Alexander Jr. (Min.)	Clayton	St. Louis
Herzinger, John Adam (S)	Lake City, Col. ....	.....
Hutchison, David Love (A), C. E., Iowa Univ.	Florence, Col. ....	.....
Hutchison, J. A., (A)	Ames, Iowa .....	.....
Kerr, William Christian (A)	St. Louis City .....	.....
Kirby, R. F. (A)	Deadwood, S. D. ....	.....
Knapp, Theron Lorenzo (Eng.)	Rolla	Phelps
Knight, Stanley Marlon (A)	Chicago, Ill. ....	.....

*Eng.—Engineering. El.—Electricity. C.—Chemistry. A.—Assaying.
Min.—Mineralogy. Met.—Metallurgy. Math.—Mathematics. S.—Survey-
ing.

Name.	Postoffice.	County.
Mitchell, Gordon Foote (A).....	Keithsburg, Ill....	.....
Norman, Samuel (A).....	St. Louis City.....	.....
Otter, J. (A) (A. B., Holy Ghost Col.)..	Jennings, Kan....	.....
Paterson, Harry (C & A).....	Newport, Ky.....	.....
Phillips, Daniel (A).....	Capioma, Kan....	.....
Schulze, Victor Eugen (Eng.).....	Vetschau, Germ'y.	.....
Shimin, Edward Wheeler (A).....	Rolla.....	Phelps..
Williams, Samuel Daugherty (S)....	Jackson.....	Cape Girardeau...
Wilkins, Elinor Matilda (Math.).....	Rolla.....	Phelps.....
-23		
ACADEMIC.		
Cooper, Charles Noble.....	Veasman.....	Maries.....
Curtis, Leslie Virgil.....	Lecoma.....	Dent.....
Ferrell, Houston Everett.....	Lois.....	Maries...
Gonzalez, Eduardo.....	Monterey, Mex....	.....
Harrison, Edmund Carroll.....	Rolla.....	Phelps.....
Holt, John Jordan.....	St. Louis City.....	.....
Johnson, William.....	Rolla.....	Phelps.....
Millard, Anna Reed.....	".....	".....
Rolufs, Rulof Theodore.....	Vest.....	".....
Shaw, Hiram Miller.....	Rolla.....	".....
Southgate, Don.....	".....	".....
Westcott, Edith May.....	Westcott.....	".....
-12		

Summer School of Science.

(B=Biology, C=Chemistry, P=Physics, P-G=Physical Geography, Phys= Physiology.)

Name.	Studies.	Postoffice.	County.
Allen, Edward T.....	B	Columbia.....	Boone.....
Arthur, S. Irvin.....	B&P	Union City, Ind..	.....
Bailey, Frank Meeker.....	B	Warrensburg....	Johnson.....
Bass, Eli Everett.....	B&P	Greenville, Miss..	.....
Baxter, Mrs. Ellen C.....	P	St. Louis City....	.....
Bond, Judson Baker.....	P	Columbia.....	Boone.....
Bradley, Emma.....	B&P	Montezuma, Iowa	.....
Brandon, Sylvester W.....	B&P	Trenton.....	Grundy.....
Branstetter, Daisy.....	P-G	Vandalla.....	Audrain.....
Broaddus, Lycurgus C.....	B	Moberly.....	Randolph.....
Bulkley, Henrietta.....	P	Higginsville.....	Lafayette.....
Campbell, Jefferson Davis.....	B	Towry City.....	St. Clair.....
Cauthorn, Edward Beauford....	P	Columbia.....	Boone.....
Clark, Manual Thomas.....	P	".....	".....
Cochel, Mary Alice.....	Phys.	".....	".....
Cochel, Ella Amanda.....	Phys.	".....	".....
Cofer, James Lewis.....	B	Robertsville.....	Franklin.....
Coffing, Lewis Riley.....	B&P	Columbia.....	Boone.....
Conley, William T.....	B&P	".....	".....
Davault, Samuel Morris.....	B	Cuba.....	Crawford.....
Duffe, Warren Mitchell.....	B&P	Macon.....	Macon.....
Dunlap, Nellie.....	B	Chillicothe.....	Livingston.....
Eitzen, Meta.....	B&P	Washington.....	Franklin.....
Evans, Edwin Elgin.....	B&Phys	Columbia.....	Boone.....
Evarts, Minnie.....	B	St. Louis City....	.....
Garrett, Linneus M.....	P	New Florence....	Montgomery....
Graves, Lula.....	B	Woodlandville...	Boone.....
Griffith, Mary Ellen.....	Phys.	Kirkwood.....	St. Louis.....
Hanzen, Lydia.....	P	Jefferson City....	Cole.....
Hicklin, Fannie C.....	B	New London.....	Ralls.....
Heninger, Ella.....	Ph&P-G	Pawnee.....	Harrison.....
Holland, Alice Elizabeth.....	B&P	Columbia.....	Boone.....
House, Jesse Eugene.....	Phys.	Kimball, S. D....	.....

SUMMER SCHOOL OF SCIENCE—Continued.

House, Robert Emerson.....	Phys.	Columbia.....	Boone.....
Hunt, Jacob.....	P	Strother.....	Monroe.....
Iiams, Dora Estelle.....	P	Columbia.....	Boone.....
Jackson, Clarence Martin.....	P	Martinstown.....	Putnam.....
Johnson, William Henry.....	P	Hickman Mills.....	Jackson.....
Jones, Mrs. Belinda Nowlin.....	Phys.	Olney.....	Lincoln.....
Keller, John Christian	B	Union.....	Franklin.....
Kirkpatrick, Harry E.....	B	Newcomer.....	Charlton.....
Leist, Mary.....	P	Higginsville.....	Lafayette.....
Loeb, Clarence.....	Phys.	Columbia.....	Boone.....
McCormick, James William.....	Ph&P-G	Chillicothe.....	Livingston.....
McCullough, Howard Reno.....	P	Kossuth, Iowa .....	.....
Maddox, Joseph Shelby	B&P	Long Branch	Monroe.....
Maloney, John Cornelius.....	Phys.	Cretcher.....	Saline.....
Mann, Hugh Ballard.....	B&P	Craig.....	Holt.....
May, David W.....	Phys.	Garver.....	Clinton.....
Moloney, John Storan.....	B	St. Louis City.....	.....
Montague, Edith.....	B	Gray's Summit... ..	Franklin.....
Moore, Gip.....	B	New Palestine... ..	Cooper.....
Moore, Joseph Rockefeller.....	B	Union.....	Franklin.....
Munday, Bert.....	B	Canton.....	Lewis.....
Owen, Fred Benjamin.....	P	Clinton.....	Henry.....
Peeler, William Barney.....	B&P	White's Store	Howard.....
Phillips, Silas Bent	P	St. Louis City.....	.....
Potter, Peter.....	B	Springfield.....	Greene.....
Rhodes, Sallie Landon.....	B	Maud.....	Shelby.....
Rocheford, Julia.....	P-G&P	Shaw.....	Boone.....
Rocheford, Rose Ella.....	P-G	".....	".....
Rogers, Henry.....	P	Strother.....	Monroe.....
Salmon, Kate Letcher.....	P	Tarkio.....	Atchison.....
Scrivener, Douglas Scott.....	Phys.	Columbia.....	Boone.....
Steele, Mary Isabelle.....	B&P	Cuivre.....	Audrain.....
Stoker, Dee Antonio.....	B&P	Clinton.....	Henry.....
Strickler, Nana.....	B	Columbia.....	Boone.....
Tillman, Herman.....	B	Loose Creek.....	Osage.....
VanNeman, Lula.....	B&Phys	Carthage.....	Jasper.....
Walters, William Wade.....	P-G&P	".....	".....
Walters, Francis M.....	Phys.	Warrensburg.....	Johnson.....
Watson, Sophia.....	B	Waverly, Ill.....	.....
Wauchope, Joseph A.....	B&Phys	Hampden-Sidney	.....
Wayland, John Green.....	P	Va.....	.....
Weatherly, James Edward.....	B	Salisbury.....	Charlton.....
Williams, David Edgar.....	B&P	Columbia.....	Boone.....
Williams, Susannah P.....	P	Conway.....	Laclede.....
Wise, Mary Nona.....	B	Kirkwood.....	St. Louis.....
Wood, Walter Fountain.....	B	Wentzville.....	St. Charles.....
Wright, Mary Alice.....	Phys.	California.....	Moniteau.....
		Columbia.....	Boone.....

—80

SUMMARIES.

I. Enrollment in Academic Studies.

(a) Columbia:			
English.....	258	Mathematics.....	216
Latin.....	143	Astronomy.....	17
Greek.....	72	Physics.....	149
Classical Archæology.....	37	Chemistry.....	181
Romance Languages.....	151	Geology and Mineralogy.....	80
Germanic Languages.....	185	Biology.....	144
History and Political Economy.....	133	Elocution.....	102
Philosophy.....	68		
(b) Rolla:			
Mathematics.....	90	English.....	39
Chemistry.....	78	Modern Languages.....	39
Physics.....	74		

II. Enrollment in Technical Studies.

(a) Columbia:			
Bacteriology	20	Physiology	35
Drawing	77	Entomology	35
Shop-work	123	Book-keeping and Stenography ..	71
Veterinary Science	29	Horticulture	44
Agriculture	63	Pathology	101
(b) Rolla:			
Drawing	67	Chemical Laboratory	78
Shop-work	34	Engineering	73
Mining and Metallurgy	39		

III. Enrollment in Departments.

I. ACADEMIC:		VII. A. AND M. COLLEGE,	
Graduates	17	(a) Agriculture:	
Seniors	32	Fourth Year	3
Juniors	46	Third Year	3
Sophomores	66	Second Year	7
Freshmen	81	First Year	26
Specials	36	Specials	3
Irregular	6	Short Course (Agriculture) ...	21
Total	283	Short Course (Horticulture) ...	11
II. NORMAL:		Total	74
Regular	33	(b) Mechanic Arts	123
Teachers	24	(c) Engineering:	
Total	57	Seniors	8
III. LAW:		Juniors	13
Seniors	65	Sophomores	17
Juniors	64	Freshmen	23
Specials	4	Total	61
Total	133	(d) School of Mines (Rolla):	
IV. MEDICAL	52	Seniors	8
V. MILITARY SCIENCE AND TAC-		Juniors	10
TICS	136	Sophomores	20
VI. ELOCUTION	94	Freshmen	31
		Specials	23
		Academics	12
		Total	104

IV. Enrollment in Academic Courses.

	A. B. B. L. B. S.		
Seniors	11	16	5
Juniors	20	19	7
Sophomores	21	29	16
Freshmen	22	34	25
Totals	74	98	53

V. Enrollment in Engineering Courses.

(a) Columbia:		(b) Rolla:	
Civil Engineering.....	24	Mining Engineering.....	35
Mechanical Engineering.....	10	Civil Engineering.....	22
Electrical Engineering.....	25	Chemistry and Metallurgy.....	12
		Special.....	23

VI. Students Working in Gymnasium.

Young Men.....	100	Young Women.....	6
----------------	-----	------------------	---

VII. Young Men and Young Women.

(a) Columbia:			
Regular Session:		Summer School of Science:	
Young Men.....	57	Young Men.....	50
Young Women.....	94	Young Women.....	30
(b) Rolla:			
Men.....	100	Women.....	4
Total, Young Men.....	677	Total, Young Women.....	128
Number of Individual Students.....			805

VIII. Total Enrollment.

Academic.....	286
Law.....	133
Medical.....	52
Normal.....	53
A. & M. College: 1. Agriculture.....	63
2. Horticulture.....	11
3. Engineering.....	61
4. School of Mines.....	104
Summer School of Science.....	80
Total.....	834
Names counted twice.....	29
Total number of individual students.....	805
Total number at Columbia.....	701
Total number at Rolla.....	104

IX. Counties Represented in the University.

Adair.....	4	Butler.....	0
Andrew.....	2	Caldwell.....	10
Atchison.....	4	Callaway.....	7
Audrain.....	13	Camden.....	0
Barry.....	2	Cape Girardeau.....	13
Barton.....	8	Carroll.....	7
Bates.....	6	Carter.....	0
Benton.....	1	Cass.....	7
Bollinger.....	0	Cedar.....	1
Boone.....	174	Chariton.....	6
Buchanan.....	10	Christian.....	0

COUNTIES REPRESENTED IN THE UNIVERSITY—Continued.

Clark.....	1	Morgan ...	4
Clay.....	7	New Madrid.....	5
Clinton.....	9	Newton	1
Cole.....	9	Nodaway.. ..	4
Cooper.....	9	Oregon	0
Crawford.....	5	Osage	1
Dade.....	1	Ozark.....	3
Dallas	1	Pemiscot.....	1
Davless.. ..	4	Perry.....	1
DeKalb.....	2	Pettis.....	21
Dent	4	Phelps.....	23
Douglas	0	Pike	9
Dunklin.....	0	Platte.....	1
Franklin.....	8	Polk	1
Gasconade	1	Pulaski.....	4
Gentry.....	6	Putnam.....	5
Greene.....	8	Ralls	3
Grundy.....	5	Randolph	9
Harrison.....	5	Ray.....	12
Henry	6	Reynolds	0
Hickory	0	Ripley	0
Holt	7	St. Charles.....	7
Howard.....	4	St. Clair.....	5
Howell.....	1	St. Francois.....	5
Iron.....	1	Ste. Genevieve... ..	2
Jackson	27	St. Louis	8
Jasper.....	15	Saline.. ..	21
Jefferson.....	6	Schuyler.....	3
Johnson.....	6	Scotland.....	2
Knox.....	1	Scott	3
Laclede... ..	8	Shannon.	0
Lafayette	14	Shelby.....	8
Lawrence	3	Stoddard.. ..	0
Lewis	5	Stone	0
Lincoln... ..	8	Sullivan.....	1
Linn.....	9	Taney	0
Livingston	8	Texas.....	1
McDonald.....	0	Vernon.....	12
Macon.....	10	Warren.....	2
Madison.....	0	Washington.....	0
Maries.....	2	Wayne	0
Marion.....	5	Webster.....	1
Mercer.....	0	Worth	1
Miller.....	5	Wright.....	2
Mississippi.....	0	City of St. Louis	26
Moniteau	12		
Monroe.....	11	No. of counties represented, 94.	
Montgomery.....	9	No. of counties not represented, 20.	

X. States, Territories and Foreign Countries.

Arkansas.....	4	Nebraska.....	1
Colorado	4	Ohio.....	1
Connecticut	1	Oregon	2
Florida	2	Pennsylvania.....	1
Georgia.....	1	South Dakota.....	2
Idaho.....	1	Tennessee.....	2
Illinois.....	12	Texas.....	7
Indiana.....	2	Virginia	1
Iowa.....	7	Washington.....	1
Kansas	5	Indian Territory.. ..	4
Kentucky.....	3	New Mexico.....	2
Maryland.....	1	Canada.....	1
Massachusetts	1	Central America.....	1
Michigan.....	1	Germany.....	2
Minnesota	1	Mexico	6
Mississippi.....	1		
Missouri.....	758	Total represented, 32.	

GRADUATES OF 1896.

(a) COLUMBIA, MISSOURI.

I. CERTIFICATES.

Department of Military Science and Tactics.

Gurry Huggins, <i>cum laude</i> .	James Samuel Harrison
Clarence Martin Jackson, <i>cum laude</i> .	Leonard Hegnauer, Jr.
Robert William Brown.	William Casper Hock.
Lisbon Elwood Durham.	Roy McFarland.
Raymond Sanfley Edmonds.	Leroy Levi Perrine.
Karl Henry Hansen.	Thomas Benton Perry.
Joseph Vance Wilhite.	Orville Hume Turner.

Department of Engineering.

1. In Surveying.

Robert Edward Johnson.	Carl Maughmer.
Lewis Loyd.	William Henry Turner.

2. In Electrical Engineering.

Orville Hume Turner.

College of Agriculture and Mechanic Arts.

Alonzo Conduit Lillard.

Normal Department.

Rosa Delcena Crump.	Herman Kraemer.
William Boyd Dickinson.	Floyd Sexton.
Stella Fewsmith.	Margaret Ann Wulfert.
Rena Myra Frank.	Walter Fountain Wood.
Henry Herrenleben.	

II. DEGREES.

Department of Engineering.

1. Degree of Bachelor of Science in Civil Engineering (B. S.).

Frank Spencer Balthis.	Robert Peel Garrett.
Lee Highly.	Curtis Hill.
James William Skelly.	

2. Degree of Bachelor of Science in Electrical Engineering (B. S.).

Thomas Robert Fowler.	James Curd Hinde.
Charles Everett Young.	

3. Degree of Bachelor of Science in Mechanical Engineering (B. S.).

Elliott Jeffries Mason.

Department of Medicine.

Degree of Doctor of Medicine (M. D.).

James Sanford Barnett.
Holland Abell Lipscomb.

William Augustus Gillaspie.

Department of Law.

1. Degree of Bachelor Of Laws (LL. B.)

William Sherman Campbell, <i>cum laude.</i>	Homer Allison Harris.
Thomas Jefferson Eppes, <i>cum laude.</i>	Robert Harry Hunter.
Joseph Boyce March, <i>cum laude.</i>	Melville Sinclair King.
George Joseph Stampfli, <i>cum laude.</i>	Walter Tazewell LaFollett.
Edwin Moss Watson, <i>cum laude.</i>	James Hardin Lay.
William Fuqua Wilkinson, <i>cum laude.</i>	William Robertson McCandless.
Dick Prigmore Berry.	Alexander McHenry Meadow.
William Buchholz.	Michael Harry O'Connor.
Edward Eugene Campbell.	Guy Brasfield Park.
William James Carlon.	Stuart Robinson Price.
Carey May Carroll.	Charles Edgar Prowell.
William Thomas Clements.	Henry Cleveland Robinson.
Jerry Culbertson.	Roy Robert St. John.
Paul Robert Davis.	James Calvin Shaner.
Kent Leonard Eldred.	Charles Parson Snell.
William Richard Gentry.	Theodore Clifton Sparks.
Bernard Arthur Gow.	Earl Miller Taylor.
William Gray.	Wilson Allen Taylor.
Aubrey Rutherford Hammett.	Kirk Baxter Turner.
Harry Chambers Hamner.	Ernest Jackson Westerhouse.
	Fred Young.

College of Agriculture and Mechanic Arts.

1. Degree of Bachelor of Agriculture (B. Agr.)

Thomas Isaiah Mairs, *cum laude.* Nathaniel Ogden Booth.

2. Degree of Master of Agriculture (M. Agr.)

David William May (B. Agr., Univ. of Mo., '94.)

Normal Department.

Diplomas and Life Certificates.

George Thomas Davis.
Ella Bevans McCutchan.
Frank F. Thompson.

Hubbard Kavanaugh Hinde, Jr.
Virginia Sutherland.

Academic Department.

1. Degree of Bachelor of Arts (A. B.)

Clarence Loeb, <i>cum laude</i> .	Ignatius McCutchan, <i>cum laude</i> .
Charles Emanuel Byers.	Andrew Jackson Detweiler.
Grace Harrison.	Hubbard Kavanaugh Hinde, Jr.
Herman Kraemer.	Joseph McCutchan.
John William Scott.	Mary Pauline Scott.
Walter Fountain Wood.	

2. Degree of Bachelor of Science (B. S.)

Cora Eitzen Defoe, <i>cum laude</i> .	Gail Darwin Allee.
---------------------------------------	--------------------

3. Degree of Bachelor of Letters (B. L.)

Bruce Barnett.	George Thomas Davis.
Anne Dillard Hinde.	William Thomas Jones.
John Franklin Manring.	Ella Bevans McCutchan.
Washington K. Moore.	Mary Caroline Payne.
Janie Elenora Pollard.	Henry Holcomb Rutherford.
Virginia Sutherland.	Frank F. Thompson.
Nancy Pearl Westlake.	William Edwin Turner.

4. Degree of Master of Arts (A. M.).

Minna A. Kidwell (A. B., Leland Stanford, Jr., Univ., '95).
Thomas Jackson Taylor (A. B., Univ. of Chicago, '95).

5. Degree of Master of Science (M. S.).

Cora Eitzen Defoe.

6. Degree of Master of Letters (M. L.).

Edward Thorpe Allen (B. L., Univ. of Mo., '94).
Henry Joseph Gerling (B. L., Univ. of Mo., '94).

III. PRIZES, MEDALS AND SCHOLARSHIPS.

The Dachsel Prize in the Department of Engineering.....	(Not awarded)
The Prize Essays in the Department of Law—Rights to Land Made by or Resulting from Accretion, Reliction, and Avulsion:	
First.....	Thomas Jefferson Eppes
Second.....	William Sherman Campbell
The Prize Essay in the Normal Department.	(Not awarded)
The Laws Astronomical Medal.....	(Not awarded)
The McAnally Medal.....	(Not awarded)
The Stephens Medal for Oratory—The Government and the Citizen.....	
.....	Thomas Jefferson Eppes
The Military Medal... ..	(Not awarded)

The Military Cup.....	(Not awarded)
The James S. Rollins Scholarship, Department of Engineering.....	
.....	Thomas Jacobs Rodhouse
The James S. Rollins Scholarship, Department of Medicine.....	
.....	Robert Lee Reid
The James S. Rollins Scholarship, Department of Law,.....	
.....	William Detmar Williams.
The James S. Rollins Scholarship, College of Agriculture,.....	
.....	Alonzo James Sears.
The James S. Rollins Scholarship, Academic Department, A. B.,.....	
.....	Irvin Victor Barth
The James S. Rollins Scholarship, Academic Department, B. S.,	
.....	Bert Munday.
Final Honors in Greek and Romance Languages.....	
.....	Charles Emanuel Byers.

(b) ROLLA MISSOURI.

CERTIFICATES.

Assaying and Technical Analysis.

John Simpson Cameron.	Victor Hugo Gottschalk.
George Walto Dean.	

Mathematics.

Perry Barton Anderson,	Felix Kersting.
John Simpson Cameron,	

Surveying.

Perry Barton Anderson.	George William Lockridge.
John Simpson Cameron.	Arthur Davis Terrell.
Felix Kersting.	

DIPLOMAS OF GRADUATION IN ACADEMIC COURSE.

Sylvia Burgher.	Jessie Miller Via.
Grace Serepta Richardson.	Elinor Matilda Wilkins.

DEGREES.

Bachelor of Science (in Mining Engineering.)

Walter Guy Martin (B. S., Perdue University, '95).

Engineer of Mines.

Claude Devlin Grove (B. S., Missouri School of Mines, '94).

APPENDIX I.

SUMMER SCHOOLS.

A. SUMMER SCHOOL OF SCIENCE—THIRD SESSION.

STAFF OF INSTRUCTORS.

M. L. LIPSCOMB, of the University,
Principal.

GEORGE W. KRALL, of the Manual Training School, St. Louis,
Teacher of Physics.

HOWARD AYRES, of the University,
Teacher of Biology.

C. M. JACKSON, of Columbia Academy,
Teacher of Biology.

E. J. MASON, of the University,
Teacher of Drawing and Shopwork.

JOHN C. WHITTEN, of the University,
Teacher of Horticulture.

JOHN M. STEDMAN, of the University,
Teacher of Horticulture.

There will be in the University of the State of Missouri, at Columbia, during the summer of 1897, a School of Science, in which laboratory courses of six weeks each will be given in Biology, Physics, and, if there is sufficient demand, possibly in Chemistry. There will be auxiliary courses also in Drawing and Shopwork and in Horticulture.

These courses will be strictly for the benefit of those who are or who expect to be teachers. None of the work will be recognized as leading to any degree in the University. This is an excellent opportunity for teachers to

prepare themselves to fill the positions which will be created in considerable number by the requirement by the University of laboratory instruction in the sciences for admission to the freshman class. The superintendents and teachers of the district schools and of private schools also are cordially invited to come, but we especially recommend that the principals and teachers of high schools promptly seize this opportunity.

The age demands laboratory methods, and no teacher is competent to conduct laboratory exercises who has not himself previously done the work successfully. The introduction of this method in teaching is perhaps the greatest contribution to sound pedagogy that has been made in the latter half of the century. The spirit of the method is entering with highly beneficial results into the teaching of all subjects. It greatly improves the general teaching in a high school to introduce, under a thoroughly competent teacher, a good laboratory of science. The result is quickly felt in the teaching of other subjects.

Special attention will be directed to the details of laboratory equipment, the purchase of supplies, the care of apparatus, and to showing how to do the work with simple and inexpensive appliances. Accordingly much care will be given to the following things: In Biology, to the collection and preservation of the necessary material, both animals and plants; in Physics, to the construction of simple but useful pieces of home-made apparatus; and in Chemistry (should the course be given) to the equipment of laboratories where gas and running water are not available. We shall try to show *just how with suitable equipment from twenty to twenty five pupils can best be carried forward together through a year's good work in the elements of these sciences.*

That this may be properly shown, all persons will be graded as *beginners*, without regard to their experience in teaching or their attainments in science. The object is not so much to teach the facts of science as to show *how science should be taught*. In Physics it will be assumed that the students have some knowledge of Algebra and Plane Geometry. The apparatus employed will be precisely that which we advise high schools to buy, and an effort will be made to show that with a comparatively inexpensive equipment excellent teaching may be done, provided that the teacher be thoroughly qualified.

No student will be allowed to take work in more than one laboratory at a time. But those who finish first the course in Biology may afterwards take that in Physics or Chemistry. The minimum time required in each laboratory will be five hours a day—thirty hours a week. Teachers that take Biology may take after 4 p. m. the auxiliary course in Shopwork and Drawing, and those that take Physics may add thereto after 4 p. m. the auxiliary course in Horticulture.

Certificates will be given only to those who devote the whole term of six weeks to the laboratory selected and pass a satisfactory examination on the subject matter as well as on the methods.

It will scarcely be questioned that in sound education the training of the industrial and the intellectual faculties should be combined. It is not reasonable that pupils in our rural schools should in years be taught a multitude of things and get not even an elementary knowledge of soils, plants and vegetable nutrition. It is so easy with modest equipment and a slight expenditure of time to impart respectable skill in the handling of tools that there is no justification for not teaching handicraft in the district schools in the seventh and eighth grades. Every rural school in Missouri should have by it an acre or more of ground as an open air laboratory of experimentation in the elements of Botany and Horticulture; while the school house itself and its grounds should be tastefully adorned with vines, shrubs, and trees. Every school should have even in winter plants of some sort about its windows within. In the management of this plat of ground—what the Germans call the school-garden to distinguish it from the kindergarten, which is a different thing—the rural high schools might attempt more than has been suggested above. Moreover, every good district school, whether in city or in country, and still more, every high school, should have at least one room well lighted and fairly fitted for bench work in wood and in metal. Forges and motive power while useful, are not necessary. A modest equipment for wood carving and for bench work in wood and in metal is inexpensive, and with skillful teachers would be most valuable for the development of boys and girls intellectually as well as industrially. In this connection is called attention to the excellent pages on Industrial Education with which Superintendent Kirk begins the Forty-Seventh Annual Report. Such training is not less valuable for girls than it is for boys.

Accordingly the University offers a course of six weeks in Shop Work and Drawing, beginning May 30 and ending July 10. This course may be taken in addition to that in Biology, for the work will not begin earlier than six o'clock in the afternoon. This course will not be given unless at least ten teachers apply for it, and promise to continue in it for six weeks. The work will not be too severe for ladies. We hope that principals and superintendents of schools male and female will come and test the possibilities of introducing this work into the public schools. It is an experiment in pedagogy, made on pedagogues first, to be followed by similar experiments next winter here and we hope elsewhere on school children. Information will be given as to the essentials and cost of a minimum equipment. Teachers seeking preparation for laboratory work will find this course especially valuable for *developing in them skill to provide home-made apparatus*. The shops of the University have cost, including the building and equipment, over fifty thousand dollars, and good instruction with great success is given annually to more than one hundred students. Undoubtedly, therefore, we have the equipment and the pedagogical skill to train teachers in Shop

Work if they show zeal and perseverance in learning. The University of Oxford, in England, offers a Summer Extension Course in Manual Training.

To test the possibility of teaching Horticulture in the high schools and in the upper grades of the district schools a course for teachers will be offered in Horticulture, beginning July 12 and ending August 21. This course will follow that in Biology and be a practical application of it. Our State University has today a better equipment for teaching Horticulture than can be found anywhere else (except at Shaw's Garden, St. Louis) in the northern half of the Mississippi Valley. In all this territory there is not a State that has equal facilities for good teaching in Horticulture. Within a square of the University campus we have for this purpose thirty-two acres of land with green houses, forcing beds, and the tools and other apparatus for good work, practical and scientific, in Horticulture. We succeed admirably every year in teaching it to a number of students, and feel sure that we shall succeed with the teachers also if they exhibit zeal and determination. This course may be taken in addition to that in Physics. The work will be from four to six in the afternoons four times a week. The crude labor necessary for the preparation of ground, etc., will be furnished by the University. The teachers will be expected to work some with their hands, but only where hand work is indispensable to learning. This course will be accompanied by six lectures in Economic Entomology by Dr. Stedman. A knowledge of the six weeks' course in Biology will be assumed. The instruction will be partly practical, but largely scientific. This course will not be given unless at least ten teachers apply for it and promise to continue in it throughout the six weeks.

This experiment may lead to the introduction of Horticulture, Agriculture, and Handicraft as studies in the schools of Missouri. Handicraft in the common schools has been tried with success in many places in Europe (notably in Sweden), and Agriculture has been tried on a large scale and with fair success in the schools of Canada and of more than one country in Europe. It is hoped that principals and superintendents, both men and women, will attend this course to test its possibilities. It is an experiment in pedagogy made on pedagogues first, to be followed by similar experiments next winter here, and we hope elsewhere, on school children.

Unlike other summer schools, this is not dependent upon fees, but is supported by the University, which bears all of the expenses of instruction, the students contributing thereto nothing except their time and their willingness to learn. Text-books are recommended and the students are referred to them sometimes for fuller statements, but the only work done in the University buildings is *laboratory work*. Where the apparatus which we use in the regular session is different from what we should recommend to the high schools, it is carefully locked up, and we buy for these summer courses precisely the instruments, materials and furniture that we should recommend to the high schools, even though we have in our cases far bet-

ter equipment for our regular University classes. The students are required in Physics, for example, as a part of the course, to make out lists of the apparatus, materials, and furniture necessary for the equipment of a good school laboratory. Where it is better to have the apparatus made at home the exact specifications for its manufacture are copied by every student. Our courses are not given to help our young Instructors to eke out better salaries, but are supported by the University of Missouri for the good of the teachers. We employ the instructors that, in our opinion, are best for this instruction, not confining ourselves to the University corps. A teacher may be admirable for a University, but not suited to this teaching.

FEEs AND BOARD.

There is no charge for instruction or for use of laboratories and materials.

Good board including room and service may be had in private families in Columbia at from \$3.00 to \$4.50 a week. Washing may be had at from 25 cents to 35 cents a week. If the students choose to organize themselves into a club, the expense of living may be greatly reduced. The University in that event would place at their disposal, rent free, its club houses, which accommodate about one hundred and forty persons. Each room is furnished with a plain bedstead, table, and two chairs. If two persons occupy one room the other furniture absolutely necessary may be bought or rented for the summer for ten or twelve dollars. Table board in these clubs can easily be brought within \$2.00 a week.

Missouri is so far North that teachers from the South would find in the climate here a decided change, while people in our large cities would get here all the comfort of an outing in the country. Columbia is a delightful town of about five thousand inhabitants. Its people are distinguished for their hospitality, culture, and refinement. Teachers in the summer school will have access, during certain hours of the day, to the Library of the University, and it may be possible to give them the use of the Gymnasium and bath rooms also.

TIME OF OPENING.

The courses in Biology and Shopwork and Drawing will begin Monday, May 31, 1897 (Commencement Week), and continue six weeks, ending Saturday, July 10. On the following Monday, July 12, the courses in Physics and Horticulture and (if the course should be given) in Chemistry will begin and continue six weeks, ending August 21, 1897.

Teachers that intend to come are earnestly requested to present themselves on the opening day of the course which they expect to attend, and to continue without intermission to the end of that course. Those who are not willing to follow this advice will fail to reap the advantages of these courses.

The State Superintendent of Public Instruction, Hon. John R. Kirk, says: "As a means of exemplifying modern methods of teaching science in secondary schools, I believe the Summer School of Science at the State University to be unsurpassed by any institution in our country; and I hope to see a largely increased attendance at the coming summer session. School principals and superintendents as well as high school science teachers would receive a great intellectual uplift by spending a few weeks in this excellent training school whose purpose is declared to be: not to teach high school science but to *teach teachers how to teach high school science*. This is not done with the fine apparatus used for the advanced University classes; it is done with equipments just such as are now found in several of our best public high school laboratories; and the *making of apparatus is not least among the things exemplified*.

"If there are teachers in any county who desire to attend this school in lieu of the county institute, I recommend that they be released from attendance upon the county institute and be given a special examination by the county commissioner."

Professor F. Louis Soldan, Superintendent of Public Schools, St. Louis, says: "The University is better equipped for science work than any other school in the state, and the advantages which the course of training during vacation offers are unparalleled. I sincerely hope that many teachers in the state will continue to avail themselves of this rare opportunity.

For further particulars, address,

PROFESSOR. M. L. LIPSCOMB,
COLUMBIA, MO.

B. SUMMER SCHOOL IN MATHEMATICS AND LANGUAGES.

During the summer of 1897, courses of instruction will be offered in French, German, Greek, Latin, and Mathematics.

These summer courses are private enterprises, and in that respect differ from those offered in the Summer School of Science. They are intended (1) to aid University students in making up work in which they have failed or been conditioned, or in which they are behind in their regular Academic courses; (2) to prepare students to meet the higher entrance requirements announced for the fall of 1897 and following years (see pages 41-43); and (3) to afford teachers in district and secondary schools the opportunity of reviewing subjects that they teach, and of gaining suggestions for new methods.

If a student desires credit on the University records for grades made in one or more of these summer courses, he must observe the following rules:

1. The course must be approved by the Professor of the subject that it treats.

2. If it be work that the student has not gone over in some regular University course, he may not, in one summer, make a grade on more than the equivalent of four (4) hours a week for one semester of lecture-room work, or six hours a week of laboratory work, or from four to six hours (at the discretion of the Committee on Summer Work) of work that is in part lecture-room and in part laboratory.

3. If the work be wholly or in part that in which the student has been conditioned or has failed, he may make up, in amount, whatever is approved by the Professor of the subject undertaken and by the Committee on Summer Work.

The amount of the tuition fees is determined in each case by the instructor. If University supplies are used, they must be paid for at the same rate as in the regular session.

Board, with lodging, may be obtained for from \$3.50 to \$4 a week.

FRENCH.

1. Elementary Course. *Six weeks, beginning July 12.* Professor Weeks
 2. Advanced Course. *Six weeks, beginning July 12.* Professor Weeks.
- The fee for each course is \$10, payable in advance.

GERMAN.

1. First year's work. *Six weeks, beginning June 7.* Miss Riggs.
 2. Second year's work. *Six weeks, beginning June 7.* Miss Riggs.
- Other work will be arranged if there is any demand for it.
Tuition for one course, \$10; for two or more, \$15.

GREEK.

1. Elementary Greek. *June 7th to July 17th.* Assistant Professor Pickard.
2. Xenophon's Anabasis. *June 7th to July 17th.* Assistant Professor Pickard.

Other courses may be given if a sufficient number apply. For further information apply to Professor W. G. Manly.

LATIN.

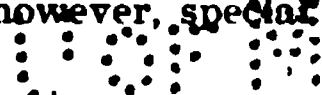
1. Livy and Tacitus. Adapted, as an elective, for those who have completed the Sophomore Latin of the regular Academic A. B. course. *Six weeks, beginning June 7.* Mr. Catron.

2 and 3. The regular Freshman and Sophomore work (see page 59.)
Six weeks, beginning June 7. Mr. Catron.

4. Elementary courses in Latin, preparing for entrance examination. *Six weeks, beginning June 7.* Mr. Catron.

Texts: Kelsey's Cæsar and Cicero, and Collar and Daniel's First Latin Book (revised edition).

A fee of \$10, due within ten days after entrance, will admit to any one or to all courses. If a course is organized for one person, however, special



rates will be charged. The University will credit (of work done during one summer) the amount of four hours (of class-room work) for a single semester.

This will be a good opportunity to make up deficiencies or entrance requirements. Students who wish to make University credits in Latin are strongly advised to concentrate upon the work in that subject.

The above courses will not be given unless at least eight students apply for instruction.

MATHEMATICS.

The following courses are offered:

1. Algebra. A review of elementary Algebra. This course will cover as much of this subject as is required for admission to the Freshman Class in the University. Assistant Professor Defoe.

Text: Hall & Knight's Elementary Algebra revised by Sevenoak, to Chapter XXXV.

2. Trigonometry. This course will be the full equivalent of the work in this subject required in the Freshman year. Assistant Professor Defoe.

Text: Bowser's Treatise on Trigonometry.

3. Advanced Algebra. This course will be the full equivalent of the work taught in this subject in the first semester of the Freshman year. Assistant Professor Defoe.

Text: Hall & Knight's Elementary Algebra, beginning with chapter XXXV.

Course 2 or 3 may be counted toward a degree provided the student takes but one of them and passes a satisfactory examination at the close of the term.

All courses begin June 7 and close July 17.

Tuition for one course, \$10; for two or more courses, \$15.

Courses 1 and 3 are recommended to teachers.

APPENDIX II.

ENDOWMENT AND FREE SCHOLARSHIPS.

(Introduced by Senator Charles E. Yeater, in the 38th General Assembly.)

AN ACT providing for the endowment of the State University, and for the establishment and endowment of Free Scholarships of merit therein in each county.

(As amended by the Acts of 1897.)

Be it enacted by the General Assembly of the State of Missouri, as follows:

SECTION 1. All property conveyed by will, or by the death of an intestate, or by deed, grant, bargain, sale or gift, made or intended to take effect in possession or enjoyment after the death of the grantor, or bargainer, or any person or persons, either directly or in trust or otherwise, whereby a beneficial interest shall be created in possession or expectancy to any property, or the income thereof, to any persons other than the father, mother, husband, wife or direct lineal descendant of the testator, intestate, grantor or bargainer, except property conveyed for some educational, charitable or religious purpose exclusively, shall be subject to the payment of a collateral succession tax of five dollars for each and every one hundred dollars of the clear market value of such property, and such value shall be fixed by the probate court, on motion of any person, or on its motion, or by the judge thereof in vacation, and such shall be the duty of the probate court and of the judge thereof; and for the enforcement and collection of such tax, there is hereby created against the property affected thereby a first lien in favor of the state of Missouri, upon which a civil action may be prosecuted in any court having competent jurisdiction; and when collected, such tax shall be paid into the county treasury of the county where the testator, intestate, grantor or bargainer resided, or in the case where there is no such residence in the state, then such tax shall be paid into the county treasury of the county where such property exists or is situate. All taxes provided by this section, which shall not be paid within one year after the death of the person rendering such property subject to taxation, shall bear interest at the same rate, from the date of the death of such person, as is now provided by law for delinquent taxes, and suits therefor may be prosecuted by the same person provided by law for the purpose of instituting suits for delinquent taxes, unless the county court

shall make an order requiring the prosecuting attorney to institute suits for the recovery of such collateral succession taxes: Provided, however, that upon application and for good cause shown, the probate court, or the judge thereof in vacation, may make necessary extensions of time for the payment of such taxes, but no single extension shall exceed one year.

SECTION 1a. It shall be the duty of the probate judge of each probate court in this state, whenever the inventory and appraisement of any estate is filed in their court, which is subject to the payment of a collateral succession tax, as provided for in section 1 of this act, to immediately levy upon and charge such estate with the amount of such collateral succession tax, and require the executor, administrator or beneficiary of such estate to pay the same within one year thereafter, and if the executor, administrator or beneficiary of such estate shall fail or refuse to pay such tax within one year, then it shall be the duty of the probate judge to certify under the seal of his court, to the collector of the revenue in the county or city within the jurisdiction of said probate court, all such delinquent taxes; such certificate shall set forth the name of the testator or intestate, the kind of property, its market value upon which the tax was levied, the name of the executor, administrator or beneficiary, and the amount of tax levied and remaining delinquent; and the collector of the revenue, upon the receipt of such certificate, shall immediately proceed to collect the same as provided for in section 1 of this act. It shall be the duty of the probate judge and collector of the revenue to pay over to the county treasurer, monthly, all such taxes collected by them, taking duplicate receipts therefor, one of which receipts they shall file with the county clerk, who shall charge the treasurer therewith.

SECTION 2. In addition to the fees now provided by law, no corporation or association, other than those formed for benevolent, religious, scientific, fraternal-beneficial or educational purposes, shall be created or organized under the laws of this state, and no foreign corporation shall do business in this state unless the persons named as incorporators or the corporation shall, at or before the filing of the articles of association, or incorporation, pay to the state treasurer, in trust for the state of Missouri, to be disposed of as hereinafter provided in this act, the sum of twenty-five hundredths of a dollar for every thousand dollars of the capital stock of such corporation or association as a franchise fee, and a like franchise fee shall be paid in the same manner on every thousand dollars of the increase of the capital stock of any corporation or association.

SECTION 3. Every manufacturer of medicines or remedies, commonly known as patent medicines, shall annually pay a license tax of twenty-five dollars, and every traveling vender of such medicine or remedies shall pay a license as now provided by law; and every such traveling vender shall take out a license in every county in which he vends such articles. Every manufacturer or traveling vender failing to pay the license tax provided

by this section shall be guilty of a misdemeanor, and upon conviction, be punished by a fine not to exceed one hundred dollars; and all such fines shall be paid into the fund hereinafter provided.

SECTION 4. All moneys which may hereafter escheat to the state, after all claimants are barred by the statute of limitations, shall be distributed in the manner provided by this act to the "seminary fund" and the "state university scholarship fund" of the county from which in each instance such moneys escheated.

SECTION 5. All taxes or fees or moneys collected or received under the provisions of this act during each month by any county official, and for the purpose of this act the city of St. Louis shall be affected through its corresponding officers as if it were a county, shall be paid during the first week of the following month to the county treasurer, who shall thereupon credit three-fourths of the moneys so received to a fund hereby created, to be known as "the state university scholarship fund," and remit the remaining one-fourth to the state treasurer; and from all taxes and fees received from corporations, and all escheats received under the provisions of this act, the state treasurer shall, monthly, in the same manner, reserve one-fourth, and remit the remaining three-fourths to all the county treasurers of the state, and the treasurer of the city of St. Louis, to be credited to "the state university scholarship fund" of such counties and city, in such manner as to give to each that number of one hundred and fortieths of such remaining sum, which may equal the number of representatives that his respective county or city may have in the house of representatives of the general assembly.

SECTION 6. All moneys received by the state treasurer to be retained by him under the provisions of this act shall be deposited in the state treasury to the credit of the "seminary fund," as provided by section eight thousand eight hundred and twenty (8820) of the Revised Statutes of 1889; and upon the issue of a certificate or certificates under the provisions of such section and other sections of chapter one hundred and sixty-seven (167) of the Revised Statutes of 1889, such moneys shall be paid in amounts corresponding thereto into the state interest fund, and the proper entries in accordance therewith, shall be made by the state treasurer on the books of the treasury.

SECTION 7. All moneys received by the county treasurer of each county to be credited to "the state university scholarship fund," shall be forever kept and preserved as a sacred permanent fund; and it is hereby made the duty of the several county courts of this state, and of the mayor, auditor and treasurer in the city of St. Louis, to invest and loan said moneys in the manner provided by law for the loan of county school funds, or to invest such moneys in the bonds of the United States, the state of Missouri, or the bonds of any county or municipal corporation in the state, which the governor, attorney-general and state treasurer shall, in writing, on a request

from any county court, pronounce in their opinion to be legal and valid and proper investment securities.

SECTION 8. The income of the moneys in "the state university scholarship fund" shall be collected annually, and one-fourth of the same added to the principal, and the remaining three-fourths shall be faithfully appropriated for establishing and maintaining free scholarships in the state university, the amounts and terms of which shall be fixed and changed from time to time, as may be necessary, on the written order and resolution of the board of curators of the state university.

SECTION 9. On the first week in August in each year, beginning with the first Monday after due notice thereof, as prescribed by the county court, in two newspapers in each county, representing different political parties where such newspapers exist, there shall be held at the courthouse, in the county seat, an examination of all applicants qualified under the law to be students of the university. Such applicants shall be actual residents of the county, and such examination shall be conducted by three examiners, one of whom shall first be appointed by written notice to the county clerk by the president of the board of curators of the university during the month of July, and one selected thereafter by the county court, of another political faith, and the third selected by the agreement of the two so chosen, with power in the county court, or the presiding judge thereof in vacation, to fill all vacancies in the position of examiner; and such examinations shall be written; and shall meet the requirements for entrance in the academic department of the university: Provided, that the duties imposed on county courts or the judges thereof, by this section, shall be discharged in the city of St. Louis by the mayor.

SECTION 10. Those applicants passing the best and most meritorious examinations, to the number of scholarships established in each respective county, shall be awarded such scholarships, and be entitled thereon to enter free of matriculation fees any department, school or college of the university, and have paid to them in equal monthly installments, while attending the university, the sum provided by the scholarship so awarded, for defraying the expenses of such attendance: Provided, that no applicant shall be qualified to receive such scholarship unless such examiners shall be satisfied that the applicant is dependent upon his own exertions for his education, and financially unable to otherwise obtain the same.

SECTION 11. The cost of publishing the notices of examination, and a reasonable compensation to the examiners, to be fixed by the county court, shall be paid out of the annual income of "the state university scholarship fund," but no other expense of any nature whatsoever shall ever be paid out of such annual income.

SECTION 12. All statutes, acts or parts of acts inconsistent with this act are hereby repealed.

INDEX.

	Page		Page
Academic Department.....	38- 74	Degrees.....	24
Admission.....	41- 43	Geology.....	125
Approval of Schools.....	45- 50	Horticulture.....	115
Approved Schools.....	51- 52	Mathematics.....	123
Courses.....	53- 56	Mechanic Arts.....	120
Degrees.....	24	Military Science.....	122
Faculty.....	38- 40	Physics.....	124
Fees.....	22	Political Economy.....	123
Studies.....	57- 74	Veterinary Science.....	119
Archæology, Classical.....	61	Alumni.....	30
Astronomy.....	67	Anatomy.....	93
Biology:		Approval of Schools.....	45- 52
Animal Physiology.....	72	Approved Schools.....	51- 52
Bacteriology.....	73	Astronomy.....	67
Botany.....	73	Athletics.....	28, 37
Entomology.....	73	Athletic Association.....	30
Zoology.....	72	Bacteriology.....	73, 93
Chemistry.....	70	Biology.....	72
English.....	57	Board of Visitors.....	8
Geology and Mineralogy.....	71	Board.....	23, 36
Germanic Languages.....	63	Botany.....	73, 125
Greek.....	60	Buildings and Equipment.....	15- 18
History.....	64	Cadetships.....	27
Latin.....	59	Calendar.....	111
Mathematics.....	66	Certificates.....	24
Philosophy.....	65	Chapel services.....	18
Physics.....	69	Chemistry.....	70, 124
Political Economy.....	65	Christian Associations:	
Romance Languages.....	62	Young Men's.....	29
Admission to the University:		Young Women's.....	30
Academic Department.....	41- 43	Classical Archæology.....	61
Agriculture, School of.....	107	Class Honors.....	21
Engineering, School of.....	129	Climatology.....	125
Graduate Department.....	45, 146	Club-houses.....	18, 36
Law.....	80- 82	College of Agr. and Mech. Arts.....	100- 145
Medical.....	90	Departments.....	105
Military Science and Tactics.....	95	Faculty.....	100- 103
Normal Department.....	71	Historical Statement.....	103- 104
From Approved Schools.....	45	Commercial Studies.....	121
Advanced Standing.....	44	Counties represented.....	169
Agricultural Chemistry.....	119	Curators.....	8
Agriculture, School of.....	105- 125	Date of Meeting.....	111
Admission.....	107	Officers.....	8
Courses.....	107- 111	Report to Governor.....	1- 7
Experiment Station.....	142- 145	Curators' Scholarships.....	25
Faculty.....	105- 106	Departments of the University.....	38
Studies.....	112- 125	Academic.....	38- 74
Agriculture.....	112	Agr. & Mech. Arts, College of.....	100- 145
Agric. Chemistry.....	119	Agriculture.....	105- 125
Botany.....	125	Engineering.....	129- 136
Chemistry.....	124	Mechanic Arts.....	126- 127
Climatology.....	125	Mines and Metallurgy.....	136- 142
Commercial Studies.....	121	Law.....	80- 87
Drawing.....	121	Medical.....	89- 94
English.....	123	Military Science and Tactics.....	95- 99
Entomology.....	119	Normal.....	75- 79

	Page		Page
Directions for new Students	20	Studies	91- 94
Discipline	19	Military Science and Tactics department	95- 99
Doctor of Philosophy or Science	147	Admission	96
Drawing	121	Course	96- 97
Elocution	74	Regulations	98
Endowment law	183	Cadet officers	96
English	57, 123	State Cadets, appointment of	97
Engineering, School of	127- 136	Supplies, general	96
Admission	129	Uniforms	96
Civil Engineering	130	Mines and Metallurgy, School of	35-37, 136- 142
Courses	130- 135	Buildings and Equipment	35- 36
Degrees	129	Courses	138- 149
Electrical Engineering	132	Academic	141
Faculty	127- 128	Chemistry and Metallurgy	139
Mechanical Engineering	134	Civil Engineering	139
Surveying	132	Mining Engineering	139
Enrollment in all departments	167- 169	Degrees	138
Entomology	118	Expenses	36
Examinations	21, 37	Faculty and officers	136
Entrance	41- 44	Museums:	
Expenses	22, 36	Agriculture	114
Experiment Station	142- 143	Biology	73
Faculty, General	9- 13	Classical Archæology	61
Farm, Agricultural College	114	Musical clubs	30
Farmers' Winter Courses	107- 108	Normal Department	75- 79
Fellowships	27	Admission	vi
Fees and deposits	22	Certificates	77
Free tuition. See Curators' Scholarships		Courses	77- 79
Geology and Mineralogy	71, 125	Degree	79
Germanic Languages	63	Faculty	75- 76
Gifts to the University	32-35, 36	Spring courses	79
Graduate Department	146- 152	Summer courses	79
Academic	146- 151	Observatory	68
A. and M.	151	Omissions, and Corrections	vi
Law	151	Officers	13
Graduate students	45, 146	Philosophy	65
Graduates of Approved Schools	45	Physical Culture	28
Graduates of 1896	171	Physics	69, 124
Greek	60	Physiology	72, 92
Gymnasium	28	Political Economy	65, 123
History	64	Preachers and Lecturers	14
Honorary Degrees	24	Prizes	25
Horticulture	115	Publications, students'	28
Laboratories	17	Religious exercises	18
Latin	59	Rollins Aid Fund	28
Law Department:		Rollins Scholarships	26
Admission	80- 82	Romance Languages	62
Advantages	87	Schemes of Studies	54, 90, 110, 130-135, 139, 142
Courses	83- 85	Scholarship Act (Yeater)	183
Degrees and Honors	86- 87	Scholarships, free	25
Faculty	80	Scholarships, Rollins prize	26
Fees	22	Shops	126
Methods of Instruction	85	Societies	28-31, 37
Lectures	14	Special Students	44
Libraries	17, 36	Students, list of	153- 167
Literary societies	28, 37	Academic	153
Mathematics	66, 124	Agriculture	161
Master of Arts	146	Engineering	163
Mechanic Arts	120	Law	158
Mechanic Arts, School of	126- 127	Medical	160
Courses	127	Mines and Metallurgy	164
Facilities	126	Normal	157
Instructors	126	Summer School	166
Medical department	89- 94	Studies, Regulations in regard to	20
Admission	90	Stephens Medal	25
Course	90- 91	Summaries	167- 170
Degrees and Certificates	94		
Faculty	89		

Index

iii

	Page		Page
Summer Schools:		Valedictorian.....	21
Mathematics and Languages....	180	Veterinary Science.....	119
Science	175	Women, special provision for....	19
Teachers Courses.....	79	Yeater Scholarships	27
Teaching Fellowships.	27	Y. M. C. A.....	29
Tuition..	22, 36	Y. W. C. A.....	30
University Extension.....	19	Zoology.....	72

378.73

M68H

Read what Governor Stone and Governor Stephens say about Endowing the University. Pages 9-13.

20 JUN 1898

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF MISSOURI

FIFTY-SIXTH REPORT

OF THE

CURATORS

To the Governor of the State

1897--1898.

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF MISSOURI

FIFTY-SIXTH REPORT

OF THE

CURATORS

To the Governor of the State

1897--1898

COLUMBIA, MISSOURI

1898							1899																											
JULY.							JANUARY.														JULY.													
S	M	T	W	T	F	S	S	M	T	W	Th	F	S	S	M	Th	W	T	F	S	S	M	Th	W	T	F	S							
..	1	2	1	2	3	4	5	6	7	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8						
8	9	10	11	12	13	14	8	9	10	11	12	13	14	9	10	11	12	13	14	15	9	10	11	12	13	14	15							
15	16	17	18	19	20	21	15	16	17	18	19	20	21	16	17	18	19	20	21	22	16	17	18	19	20	21	22							
22	23	24	25	26	27	28	22	23	24	25	26	27	28	23	24	25	26	27	28	29	23	24	25	26	27	28	29							
29	30	31	..	..	..	..	29	30	31	..	..	..	..	30	31	..	..	..	..	..	30	31	..	..	..	..	..		
AUGUST.							FEBRUARY.														AUGUST.													
..	1	2	3	4	5	6	..	..	1	2	3	4	5	6	7	8	9	10	11	12	6	7	8	9	10	11	12					
7	8	9	10	11	12	13	12	13	14	15	16	17	18	13	14	15	16	17	18	19	13	14	15	16	17	18	19							
14	15	16	17	18	19	20	19	20	21	22	23	24	25	20	21	22	23	24	25	26	20	21	22	23	24	25	26							
21	22	23	24	25	26	27	26	27	28	..	..	..	..	27	28	29	30	31	..	..	..	..	..	..	..	..	..
28	29	30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER.							MARCH.														SEPTEMBER.													
..	1	1	1	2	3	4	5	6	7	1	2	3	4	5						
4	5	6	..	..	..	..	5	6	7	8	9	10	11	8	9	10	11	12	13	14	8	9	10	11	12	13	14			
11	12	13	14	15	16	17	12	13	14	15	16	17	18	15	16	17	18	19	20	21	15	16	17	18	19	20	21							
18	19	20	21	22	23	24	19	20	21	22	23	24	25	22	23	24	25	26	27	28	22	23	24	25	26	27	28							
25	26	27	28	29	30	..	26	27	28	29	30	31	..	29	30	31	..	..	..	..	29	30	31	..	..	..	..			
OCTOBER.							APRIL.														OCTOBER.													
..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2	3	4	5	6	7	8	2	3	4	5	6	7	8	8	9	10	11	12	13	14	8	9	10	11	12	13	14							
9	10	11	12	13	14	15	9	10	11	12	13	14	15	15	16	17	18	19	20	21	15	16	17	18	19	20	21							
16	17	18	19	20	21	22	16	17	18	19	20	21	22	22	23	24	25	26	27	28	22	23	24	25	26	27	28							
23	24	25	26	27	28	29	23	24	25	26	27	28	29	29	30	31	..	..	..	..	29	30	31	..	..	..	..			
30	31	..	..	..	..	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
NOVEMBER.							MAY.														NOVEMBER.													
..	..	1	2	3	4	5	..	1	2	3	4	5	6	..	..	..	1	2	3	4	..	..	..	1	2	3	4	
6	7	8	9	10	11	12	7	8	9	10	11	12	13	5	6	7	8	9	10	11	6	7	8	9	10	11								
13	14	15	16	17	18	19	14	15	16	17	18	19	20	12	13	14	15	16	17	18	12	13	14	15	16	17	18							
20	21	22	23	24	25	26	21	22	23	24	25	26	27	19	20	21	22	23	24	25	19	20	21	22	23	24	25							
27	28	29	30	..	..	..	28	29	30	31	..	..	..	26	27	28	29	30	..	..	26	27	28	29	30	..	..					
DECEMBER.							JUNE.														DECEMBER.													
..	..	..	..	1	2	3	..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	..	..	1	2	3	4
4	5	6	7	8	9	10	4	5	6	7	8	9	10	3	4	5	6	7	8	9	4	5	6	7	8	9								
11	12	13	14	15	16	17	11	12	13	14	15	16	17	10	11	12	13	14	15	16	10	11	12	13	14	15	16							
18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23	17	18	19	20	21	22	23							
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30	24	25	26	27	28	29	30							
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..	31	..	..	..	..	..	..	

UNIVERSITY CALENDAR.

AT COLUMBIA.

1898—September 8, 9, 10, 12.....Entrance Examinations
September 13, Tuesday All Departments Open
November 23, Wednesday, 4 p. m., to November
28, Monday, 8:30 a. mThanksgiving Holidays
December 20, Tuesday.....Semi-annual Meeting of the Curators
December 22, Thursday, at 10:30 a. m., to }
1899—January 3, Tuesday, at 8:30 a. m }Christmas Holidays
January 9, Monday. Memorial Day
January 20-28.....Mid-Year Examinations
January 31, TuesdaySecond Semester Begins
February 22, Wednesday.....Holiday
May 26 to June 3.....Final Examinations
June 3, SaturdayStephens Medal Contest
June 4, Sunday..Baccalaureate Sermon
June 5, Monday..Class Day
June 6, Tuesday.....Alumni Day
June 6, Tuesday.....Annual Meeting of the Curators
June 7, Wednesday.....Commencement Day

AT ROLLA.

1898—September 17 and 19, Saturday and Monday,
10 a. mEntrance Examinations
September 20, TuesdayFirst Term Begins
November 24, Thursday.....Thanksgiving Holiday
December 23, Friday, at 12 m., to }
1899—January 3, Tuesday.. }Christmas Holidays
January 3, TuesdaySecond Term Begins
February 22, Wednesday..Holiday
March 20, MondayThird Term Begins
June 13, Tuesday.....Annual Meeting of Executive Committee
June 14, Wednesday.Commencement

CONTENTS.

GENERAL STATEMENT—Calendar	11-	111
Report of the Board of Curators	1-	13
Corporation		14
General Faculty.	15-	19
Officers, Preachers and Lecturers	20-	21
GENERAL INFORMATION	22-	60
Historical Statement		22
A. AT COLUMBIA.	22-	58
Requirements for Admission by Examination	28-	27
Admission from Approved Schools	27-	39
Organization and Government.		39
Buildings and Equipment	39-	42
Lectures, Recitations and Religious Exercises		42
Provisions for Young Women		42
Discipline		43
Directions for new Students		43
Regulations regarding studies		43
Expenses		45
Degrees and Certificates		48
Prizes		49
Sources of Aid	50-	52
Physical Culture		52
Societies	53-	56
Gifts to the University	56-	58
B. AT ROLLA	58-	60
Buildings and Equipment	58-	59
Expenses, etc	59-	60
DEPARTMENT STATEMENTS—		
I. GRADUATE	61-	68
Admission (Academic Graduate Courses)		61
Degrees (Academic)		62
Courses	63-	66
College of Agriculture		67
Engineering		67
Law		67
II. ACADEMIC—Faculty.	69-	70
Scheme of Courses	71-	75
Courses of Study in detail	76-	94
English, 76; Latin, 78; Greek, 79; Classical Archæology, 79; Ro-		
mance Languages, 80; Germanic languages, 82; History, 83;		
Political Economy, 83; Philosophy, 84; Mathematics, 85; As-		
tronomy, 86; Physics, 87; Chemistry, 89; Geology, 90; Biology,		
91; Physiology, 92; Elocution, 93.		
School of Journalism		94

III. NORMAL—Faculty.....	95- 97
Elementary course.....	97
Advanced course..	98- 99
Teachers' courses.....	99
IV. LAW—Faculty	100
Admission	100- 103
Courses	103- 105
Texts... ..	104- 105
Graduate course..	105
Methods of instruction	106
Degrees and Honors.....	107
Announcements	108- 109
V. MEDICINE—Faculty.	110
Admission .	111- 112
Course..	112
Course in Detail.....	113- 116
Degrees, etc.....	116
VI. MILITARY—Announcement.....	117- 121
VII. COLLEGE OF AGRICULTURE AND MECHANIC ARTS	122- 166
Faculty.	122- 124
Historical Statement	125- 126
A. School of Agriculture.....	127- 147
Faculty.	127- 128
Admission	129
Schemes of courses.....	129- 133
Courses in detail..	133- 147
Agriculture, 133; Horticulture, 137; Entomology, 139; Agricultural Chemistry, 141; Veterinary Science, 141; Mechanic Arts, 142; Drawing, 143; Commercial Studies, 143; Military Science, 144; English, 145; Political Economy, 145; Mathematics, 145; Physics, 146; Chemistry, 146; Botany, 146; Geology, 147; Climatology, 147.	
B. Experiment Station.....	147- 150
C. School of Mechanic Arts	150- 154
Scheme of studies	152- 153
D. School of Engineering,...	155- 166
Faculty.	155- 156
Admission	156- 157
Courses and Degrees.....	157
Courses in detail..	157- 166
(a) Civil Engineering	157- 160
(b) Surveying.	160
(c) Electrical Engineering.....	160- 161
(d) Mechanical Engineering ...	162- 164
(e) Sanitary Engineering	164
(f) Architecture.....	165
(g) Hydraulic Engineering	166
VIII. SCHOOL OF MINES (at Rolla).....	167- 173
Faculty.	167- 168
Statement.....	168
Admission.	168
Courses and Degrees.	169
Courses in detail.....	169- 173
(a) Mining Engineering.....	169- 171
(b) Civil Engineering	171- 172
(c) Chemistry and Metallurgy.....	172- 173

LIST OF STUDENTS AND GRADUATES	174- 197
I. LISTS OF STUDENTS.	174- 189
Graduate Department	174
Academic Department	174
Normal Department	178
Law Department	179
Medical Department	181
College of Agriculture and Mechanic Arts	182
School of Mines and Metallurgy	185
Summer School	188
Summaries	189- 192
II. LISTS OF GRADUATES FOR 1896-7	193- 197
At Columbia	193
At Rolla	196
APPENDIX—	
Summer School	196
INDEX	200

Omissions and Corrections.

Add to list of Schools Approved for the A. B. Course, p. 29, Iberia Academy, Iberia, Mo., G. Byron Smith, A. M., Principal, and to those approved for the B. L. Course, p. 29, Rogers Academy, Rogers, Ark., Rev. J. M. Scraggs, A. M., Principal.

Transfer from the list of Schools Approved for Law and Agriculture, p. 32, to that of Schools Approved for Medicine, p. 30, St. Charles College, St. Charles, Mo., and Mayfield-Smith Academy, Marble Hill, Mo.; and add to list of Schools Approved for Medicine Grandin High School, Grandin, Mo.

Schools approved for Medicine are also approved for Law, Agriculture, and Mechanic Arts.

Number of students enrolled at Rolla, page 191, should be 117, making total enrollment 818.

Page 43 is mis-numbered 53.

Report of the Board of Curators.

COLUMBIA, MO., May 2, 1898.

To his excellency, LON V. STEPHENS, *Governor of Missouri*:

DEAR SIR: I herewith furnish the Annual Catalogue of the University of Missouri, presenting a review of the work done for 1897-98 and outlining the matter for the scholastic year of 1898-99.

My very recent connection with the Board of Curators, as its President, is offered in explanation of a lack of thorough familiarity with the details and duties incident to the position and the claims of the institution.

CHANGES IN THE FACULTY.

Since the publication of the last Report, the following changes have taken place in the teaching force of the University:

At Columbia: Dr. B. M. Bolton, Professor of Bacteriology and Pathology, has been succeeded by William Ophuels, M. D.; Dr. G. W. Cutler, Professor of Physical Culture and Director of the Gymnasium, has been succeeded by Mr. Crawford E. White, with the title of Instructor in Physical Culture; Mr. G. C. Broadhead, Emeritus Professor of Geology and Mineralogy, has been succeeded by Mr. Curtis F. Marbut, A. M., with the title of Assistant Professor of Geology and Mineralogy; Mr. Silas Dinsmoor, Instructor in Chemistry, has been succeeded by Mr. Richard B. Moore, B. S.; Mr. A. H. Place, Instructor in Drawing, has been succeeded by Mr. Thomas J. Rodhouse, B. S.; Miss Marion West, Instructor in Physical Culture and Acting Matron, has been succeeded by Mrs. Louise Norwood Fitch, with the title of Matron; Mr. J. W. Monser, Librarian, has been succeeded by Mr. Walter K. Stone, A. B.; Lieutenant W. A. Thurston, Professor of Military Science and Tactics, has been succeeded by A. P. Buffington, 1st Lieutenant 13th Infantry, U. S. Army.

At Rolla: Mr. Walter B. Richards, Director of the School of Mines and Metallurgy and Professor of Mathematics, and Mr. Courtenay DeKalb, Professor of Mining and Metallurgy, have been succeeded by Mr. George E. Ladd, Ph. D., with the title of Director of the School of Mines and Metallurgy, and by Mr. George R. Dean, C. E., B. S., with the title of Professor of Mathematics, and by Alexander Forsyth, A. B., Instructor in Metallurgy; Mr. Thomas L. Rubey, Instructor in Academic department, has been succeeded by Mr. John B. Scott, Instructor in English; Mr. P. A. Larsh, Assist-

ant in Chemical Laboratory, has been succeeded by Mr. George Walter Dean, B. S.; Mr. G. E. Miller, Instructor in Shop Work and Drawing, has been succeeded by Mr. Robert E. Garrett, C. E., B. S.; Miss Maude Mitchell has succeeded Mr. T. L. Rubey as Librarian.

ATTENDANCE.

It is with pleasure that I call your attention to the continued increase in the enrollment both at Columbia and at Rolla. The enrollment at Columbia is 701; that at Rolla is 117; the increase over last year is 13. This increase in the numbers is specially gratifying in that it has come in spite of an advance in the entrance requirements at Columbia and in spite of an insufficient appropriation by the 39th General Assembly, which has rendered the improvement and expansion of the courses and the better equipment of libraries and laboratories wholly impossible. It is only by the most careful economy in all departments of the University that the Board has been able to meet the running expenses, while, much to their regret, practically nothing has been done for the equipment of the libraries and the laboratories or for the addition of new Chairs actually demanded by the people.

UNIVERSITY EXTENSION.

The University does not maintain any University Extension Courses, but the President and the Teachers, when opportunity offers, deliver addresses and lectures with a view of increasing the knowledge of the people of Missouri in regard to their University and of creating a healthy sentiment for secondary and higher education. During the past session illustrated lectures on the University have been given by Mr. J. M. White, the school examiner, who devotes eleven months of the year to lecturing from town to town and to aiding the High Schools and Academies in adjusting their courses to those of the University. His work in this direction has been fruitful of much good to the secondary schools as well as to the University.

APPROVED SCHOOLS.

The relations existing between the secondary schools and the University are most cordial, and it affords me much pleasure to record a considerable increase during the past session in the number of schools approved for admission to the Academic, Engineering and Normal Departments. Secondary education has been greatly stimulated by the raising of the standards for admission, and in many communities there seems to be a general educational awakening.

In this connection, I desire to call attention to the large number of schools which have been recently approved for Law and Agriculture, and also to those approved for Medicine. The graduates of these schools, of which a list is given on pp. 30-31 of this Catalogue, will be admitted in the fall of 1898 without examination to Law, or to Agriculture, or to Medicine.

SPRING AND SUMMER COURSES.

It seems proper to emphasize the work which the University is doing for the teachers of the State in the Spring Courses for Teachers and in the Summer School. The former begins April 1 and continues to June 1, and is open without charge and without examination to every teacher in the commonwealth. The Summer School of Science, which has been successfully maintained for three summers and has also been free to teachers, has been expanded so as to embrace courses in language, mathematics and shop work, and during the coming summer will be in session from June 6 to August 27. Students will receive due credit upon the books of the University for all work done that is required in any of the established courses. It is hoped that in the near future many other courses may be added to those now offered. It is a source of profound regret that for lack of money the Curators can no longer offer free Summer Courses to the teachers of Missouri.

RAISING THE STANDARDS OF ADMISSION.

In view of the fact that the raising of the standards of admission to the Academic, Normal and Engineering Departments at Columbia has been the cause of complaint in some sections of the State, it may not be amiss to recall the circumstances which occasioned the increase in the requirements for admission. In compliance with the wishes of the High Schools and Academies of the State, the 37th General Assembly abolished the Preparatory Department. This was not done at the suggestion of the Board of Curators; neither was it done against their protest. They exerted their influence neither for nor against the proposition to drop all preparatory work. When such work had been dropped by Legislative action it became the duty of those entrusted with the management of the University to see that the wishes of the Legislature were carried out. It was not deemed wise to discontinue at once all preparatory work, and thus throw back without warning upon the High Schools the task of providing for the preparatory work which the University had been doing for many years. Hence the preparatory work was discontinued by degrees, and it was not until the fall of 1897 that the present requirements were set up. Nor were these admission requirements made without consulting the secondary schools. But in June, 1895, a Committee, known as the "Committee of Nine," was appointed by the State Teachers' Association of Missouri "to consider (1) the classification of the Colleges of the State, (2) *the proper requirements for admission to Colleges*, and to suggest (3) courses of study for secondary schools." This Committee, which was not appointed at the suggestion of the University, reported, in June, 1896, among other things, entrance requirements for admission to colleges. This part of the report was unani-

mously adopted by the State Teachers' Association, representing the entire State. The entrance requirements adopted by this Association have been adopted by the Faculty of the University for admission to the Academic, Engineering and Normal Departments at Columbia. If any one is to be censured for the present terms of admission to the University it should not be those in charge of its affairs. The Legislature ordered preparatory work discontinued, and the State Teachers' Association voted unanimously that the entrance requirements should be exactly what they now are. It is well to notice, in any case, that students may attend the University *without examination* for twelve weeks in the winter (January 1 to March 26); nine weeks in the spring (April 1 to June 1), and twelve weeks in the summer (June 1 to August 26). Any young man or woman in Missouri may pursue during these twenty-three weeks any of the courses offered, and that, too, without passing any examination for admission, and at a total cost for instruction of \$20.

NEW COURSES.

In the Engineering Department a course of Sanitary Engineering has been established, also a Graduate Course in Hydraulic Engineering. In the College of Agriculture and Mechanic Arts a new course in Mechanic Arts parallel to the course in Agriculture and intended specially for mechanics has been established. These courses will be given without additional cost to the University.

NEW CHAIRS.

At the unanimous request of the Press Association of the State, a Chair of Journalism has been established. There have also been established in the College of Agriculture and Mechanic Arts, (1) a Chair of Architecture and Drawing, (2) a Chair of Domestic Economy, to train women for household duties. As soon as the means of the University allow, these Chairs will be filled and courses offered.

It is a matter of regret that we have been able to offer no teaching in Experimental Psychology and Child Study. Such instruction has already been provided at more than thirty (30) of the foremost institutions of learning in America, and is earnestly demanded by the teachers of Missouri.

The Chair of Anatomy, already established in the Medical Department at Columbia, and to be aided by a well equipped Laboratory, has not yet been filled for lack of means. Important as Botany is to the Farmer, the Gardener and the Fruit-grower, we have not been able for lack of money to provide for it either a Laboratory or a competent Teacher. This is not dealing fairly with the agricultural classes of Missouri, but lack of money forbids any action on our part.

STATE HISTORICAL SOCIETY.

A State Historical Society has been organized with headquarters at Columbia. It is the purpose of this Society to collect all the available mater-

ial bearing upon the history of Missouri, and it is eminently proper that these records should be kept at the chief institution of learning of the State and accessible to its students. The University has provided rooms for the Society's use and until the means of the Society enable it to provide a custodian of relics and records, the Professors of History and Political Economy will render this service without compensation. This movement was made by the editors of Missouri. They are deeply interested in it.

THE NEW CLUB-HOUSE.

It is expected that the new club-house, for the erection of which the 39th General Assembly appropriated \$33,000, will be ready for use by the opening of next session in September. In beauty of exterior, in arrangement for light, heat, ventilation and convenience, it will be a model club-house. The admirable plans were prepared by Senator H. H. Hohenschild, and the building is now in the course of erection under his supervision.

In this connection I desire to express regret that there is no club-house for women. By the aid of the club-house the sons of Missouri may get most comfortable board, with heat and light, for a maximum cost of \$2 a week, while their sisters may pay for the same in private families \$4 a week. In this matter, the State is permitting the women to be discriminated against, and is making the attainment of an education more difficult for them than for the young men.

THE FACULTY.

The University is in charge of able and competent men. They are thoroughly committed to the work in hand, and display energy, enthusiasm and efficiency. It is due that the fact be made a matter of record to the credit of these gentlemen, that during the last vacation more time was employed and labor bestowed in pressing upon the people of Missouri the claims and merits of the University than formerly. The institution must be more closely articulated with the people. Keep the University before the public, is the demand of the hour.

In administering the affairs of the University one aspect challenges the most serious consideration. Changes in the Faculty are to be avoided, and should never take place unless for reasons the most cogent in their character. The changes are often inevitable because of our inability to retain in the service of the University the best qualified workers of the times. Other and more favored institutions, with ample resources at command, take from us our experienced, thoroughly trained and invaluable men. The loss thus sustained is incalculable. The retention of such competent and valuable men is all important. Unless ample provision is made to meet such needs we shall suffer additional losses. Enlarged resources should be placed at the command of the Board, enabling us to compete with any institution in the country in securing and retaining the best talent

for University work available. This view has special reference to the salaries of head professors. A great State like Missouri cannot afford to cripple the work of its University or minify the opportunity of the youth of the Commonwealth. In meeting the wants here indicated, and supplying the requisite representative ability of the age, we can attract the young men of Missouri to the University and prevent them from leaving home to find higher advantages elsewhere. The above views are commended to and urged upon the attention of the people of Missouri and its next Legislature.

SCHOOL OF MINES AND METALLURGY AT ROLLA.

The attendance at the School of Mines for the present year amounts, as shown above, to 115 students. An analysis of the courses taken by these students shows a continuation of the progress made in recent years, in developing the technical side of the school.

In 1887 one man alone represented the entire Senior, Junior, and Sophomore classes, and the total number of students was but 44. In 1888 50 per cent. of the 66 students were in the academic department, while last year less than 12 per cent. were academic and over 88 technical. The "regular" students are increasing in number, and the "specials" have become relatively less important in this respect. The indications now are that next year more than twice as many technical students will be graduated as ever before.

There is no mining school in the country which occupies so fortunate a position geographically with reference to the supply of prospective students, as ours does, and if the next General Assembly provides for its absolute wants, it need be second to no technical school in the United States.

While the character of the courses offered, the quality of teaching provided, and the provisions for the higher standard of entrance requirements are all indicative of a flourishing condition, the school has many imperative needs.

The growth of the technical side of the school renders necessary a larger teaching force in some of the essential branches of study. New facilities in the way of laboratories, shops, and lecture rooms are indispensable, even if the present attendance alone is maintained. The laboratories in the Mining and Metallurgical building have been filled this year to their utmost capacity. The class in Mineralogy, for example, has not only occupied the regular Mineralogical Laboratory, but has been obliged to take possession of the analytic room of the Metallurgists. Both the Physical and Chemical Laboratories have been so overcrowded as seriously to interfere with the conduct of the regular work. The same is true of the assay rooms. The wood-working shops, which have been in the dark and foul basement of the main building, have been moved to a cheap and temporary wooden structure owing to the danger to the main building

caused by the vibration communicated to its walls by that of the shafting and machinery. Some of the lecture rooms have been outgrown, as have been the Laboratories. The Library is likewise too small for the number of students who now use it, and has no capacity for another book. In order to receive the new volumes acquired this year older, but still valuable, books were removed and stored. There is no chapel, no permanent place for a gymnasium, no place for geological and mining specimens and models, and absolutely no place for a systematic collection of minerals. The magnificent collection of Missouri ores donated to the school from the Missouri World's Fair exhibit at Chicago, are inaccessible for lack of space to exhibit them. There are other needs, such as a water system and fire service. A low pressure steam-heating system and a lighting system are also greatly needed. At present the grounds are not even lighted, although there is an electric plant in Rolla.

The most crying needs, however, are those outlined above, and one or more new and well equipped buildings should be provided by the next Legislature.

It is gratifying to be able to say that the needs of the school result chiefly from the quality of its growth and the reputation which it has gained of being a progressive and high-grade Technical School.

I may not dismiss this portion of my report without making special mention of the fortunate selections in filling vacancies in the Faculty of the school at Rolla. The additions made to the Faculty are eminently qualified for the work assigned them. Perfect adjustment to the duties enjoined with valuable and satisfactory service rendered, may be offered in proof of the wisdom of our choice in filling vacancies. The most commendable harmony prevails among the members of the Faculty, who vie with each other in advancing the work and elevating the standard of the institution. It is with pleasure the announcement is made that the Faculty and community are in happy accord, all animated by a common purpose—that purpose in which there is entire unanimity of aim—to make the School of Mines at Rolla a grand success and the pride of the State. I repeat, that if properly maintained, the school will be made second to none in the country.

THE EXPERIMENT STATION.

This Station is a department of the College of Agriculture and Mechanic Arts, devoted entirely to original research in Agriculture, Horticulture, Veterinary Science, Entomology, Agricultural Chemistry and Botany. During the year the publications of the Station have attracted attention among the scientific and practical men of almost every civilized country. The discoveries concerning Texas fever are already exerting a profound influence on inter-State and international commerce in live-stock. The investigation on the influence of width of tires on the draft of wagons has already been accepted as final authority on this subject by the

road engineers and practical men in all parts of the Union. The study of the winter protection of peach trees has aroused the keenest interest in the peach-growing belts of the United States. The discovery of cheap and efficient means of combating the woolly aphis of the apple, an insect causing an annual loss to the fruit interests in Missouri amounting to fully \$100,000, has been one of the contributions by the Entomological department. The studies now being made by the Chemical department in the food and fuel value of animal and vegetable oils and in methods of artificial digestion, will easily rank among the leading scientific investigations of the day.

THE WEATHER BUREAU.

On the first of January the Missouri State Board of Agriculture voluntarily resigned the associate management of the Missouri Weather Service, and the University assumed these responsibilities, in co-operation with the U. S. Government. This gives to the University all the rights and benefits of a meteorological department, officered by men of high scientific attainment, fully equipped with necessary scientific instruments, and with a corps of correspondents in every section of the State for collecting all climatic data. To these records the University has full access. They are already of inestimable value in the study of the physics of the atmosphere and the climatology of the Mississippi Valley. This has, however, increased our annual outlay about \$500 at Columbia.

POSSIBLE DEFICIENCIES.

The visiting committee for the 89th General Assembly recommended, as necessary for the maintenance and support of the departments at Columbia, \$90,000. This was \$30,000 less than the lowest estimate made by the Curators. The Legislature appropriated \$67,000, which was \$23,000 less than the sum recommended by the visiting committee. In thus diminishing the resources, the management of the University was brought face to face with embarrassments as to the support of the University and carrying forward successfully its work. Every attempt has been made to operate within the limits of the income without seriously crippling the University. It has been found impossible to reduce expenses to a lower figure. The thought is most forbidding, as presented to the Board, that we may be embarrassed by a deficit at the close of the biennial period. Should this be the case, the Board will be prepared to show that said deficit grows out of the lack of the needed appropriation, which was withheld from the University by the Legislature.

ENDOWMENT OF THE UNIVERSITY.

The following is an extract from the report of the Curators to the Governor for the session of 1895-96:

"A fixed proportion (one-third of the revenue) is always set aside for the benefit of the common schools; a similar arrangement can be extended

to the University. The amount proposed is a very moderate one, much less than is regularly set aside by many of the States in the Union; and the method is one that is extremely popular wherever it is tried. It removes the question of appropriations for the University from the arena of rival and opposing claims, and it insures, in the most dignified manner, an adequate income for the support of higher education. The taxable property of the State is at present about one billion dollars, consequently the annual appropriation recommended would amount at present to about \$166,666.67. This amount should include all appropriations for the School of Mines. As the wealth of the State increases, the amount set aside for the University would increase as well, and properly so, because the University must of necessity increase in size and in completeness with the growth of the State. The State of Michigan, whose educational zeal and eminence are well known, sets aside one-sixth of a mill, as is proposed above; and in addition to that it appropriates money from time to time for the erection of new buildings. Besides Missouri, there is scarcely a western State that does not provide in this way for its University. Wisconsin and Nebraska set aside a larger proportion.

“This recommendation is respectfully presented to the intelligent people of Missouri. It is perfectly evident that the University of the State will be what the State makes it. It cannot rise above the standard set by the people. If it is to be a crown of glory and a perpetual blessing, it must be nourished and strengthened and enlarged with increasing years. It must be in no sense a bone of contention or the cause of petty jealousy; its policy must be stable; its revenues must be sure, and its promises must be faithfully kept. None of these things can be if the public favor is uncertain, and if the appropriations are to be endangered by sectional or partisan jealousies. It is our earnest hope that the next General Assembly will remove the question of properly supporting the State University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is ensured through the action of a just and unfailing rule.”

The following recommendations, respecting the State University, of Gov. Stone in his last message and of Gov. Stephens in his first message to the Legislature of Missouri, are in perfect accord. They should make an epoch in the history of higher education in our State, and should call forth hearty praise from every advocate of enlightened progress.

Hon. Wm. J. Stone, Governor of Missouri, in his message to the Thirty-ninth General Assembly at Jefferson City, on Friday, January 8, 1897, says:

“We now have laid the foundation of a great University—but we have little more than that. If the Institution is liberally supported by the people and wisely managed by those in charge of it, we can soon build up here in our Imperial State the greatest University in the southwestern section of the Union. I should regard that consummation as one of the proudest

achievements within our reach—one that would reflect the highest honor and redound in the greatest benefits to the people. Aside from the natural and patriotic desire all of us should feel to supply our sons and daughters with the best possible educational facilities, the presence of a superb and famous University in the State would do more, perhaps, than any other one thing to lift the State into universal esteem and attract to it the favorable notice of mankind. It will not do to say that the University is not the school of the poor boy, or that it is not now what it ought to be. As a matter of fact, a majority of the University students are the sons and daughters of those denominated as the common people. But if it were true that the children of the poor do not for any reason enjoy to any large extent the advantages of the institution, then their opportunities for enjoying them should be made easier. It more often happens than otherwise that those who rise to great and deserved prominence in the State or nation, and who add the greatest luster to their country's history, have come from what are regarded as the humbler walks of life. There are hundreds of boys and girls whose possibilities of usefulness and greatness cannot be estimated, if they were only given opportunities for full development. Our common and intermediate schools are indispensable. They perform a noble work and should be supported with unstinted generosity. But those schools cannot take the place of the University. The University is the final training school where those prepared for admission to it are rounded out and specially equipped for successful labor in the fields of their choice. It should be supported in a broad and catholic spirit, provided with every needed facility, and administered along such practical lines as will strengthen and build it up, so that none desiring its advantages will be denied them. If it is not now such a school as it ought to be, we should, on that account, strive all the more to make it what we would have it. Somewhere in the Southwest and in the near future, a splendid University will rise—one that will shine resplendent above all rivals. Illinois, Iowa, Kansas, Nebraska and Texas are all fighting for this distinction. When success is once achieved it will be hard to wrest the laurel from the victor. Unquestioned supremacy once obtained is apt to be permanent. Missouri holds the key to the situation, and, if we but utilize our advantage, we can win the prize. If we are to succeed, the people must take hold of the University with a firm but affectionate hand and lift it right up beyond the reach of danger, and send it forward with that confident strength that overwhelms opposition and makes victory sure.

“The University cannot be properly, even decently, supported out of the present revenues and in accordance with the present methods of making appropriations without detriment to other important interests. The truth is, this institution ought to be taken out of the general squabble for appropriations which occurs at every regular session of the General Assembly, and be provided with a permanent and sufficient income of its own. The

sum which can now be set apart out of the general revenue for the University is grossly and shamefully inadequate to answer its just demands. It ought to be sustained from a permanent fund. It should not only be spared the humiliation of becoming a biennial mendicant, but it should be placed in a position of absolute independence. Many of the States now levy a special tax or set apart by law a certain per cent. of their aggregate revenues for their Universities, varying in amount from one-fifth to one-twelfth of one mill per annum on every dollar of assessments or collections. This is done in Ohio, Indiana, Illinois, Wisconsin, Minnesota, Michigan, Kansas, Nebraska, California, and perhaps other States. In Missouri the University gets what it can out of what some have not inaptly designated as the general scramble. Why should not our University be treated with as much consideration as are those of other States? Not long since the Hon. John R. Kirk, Superintendent of Public Instruction, recommended that the General Assembly should set apart for the benefit of the University an equivalent of one-sixth of a mill per annum upon every dollar of the assessed value of the taxable property of the State; and in support of his recommendation he expressed the hope that if that policy should be adopted it would 'remove the question of properly supporting the University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is secured through the action of a just and unfailing rule.' If that recommendation should be agreed to, it would result in creating an annual revenue of about \$165,900, based on present valuations. The sum realized from such a tax would, of course, increase from year to year with the increase of valuations; but that would be as it should, for the necessities of the institution would increase with the growth of the State. In the general spirit and object of this recommendation, and in its wisdom as a policy, I most heartily concur; but whether it could be entered upon at this time, without making provision for additional sources of revenue, is questionable, because of the amount it would absorb out of the aggregate. However, the suggestion is one that can be made practicable by enlarging the revenues, and I earnestly invoke your attention to it with the hope that it may be regarded with favor."

Hon. Lon V. Stephens, Governor of Missouri, delivered before the Thirty-ninth General Assembly, at Jefferson City, January 11, 1897, his Inaugural Address, in which he said:

"No interest in Missouri should be more carefully guarded or more vigorously promoted than her public school system. Her schools should all be encouraged by wise legislation and supported, as they have always been, by ample appropriations. The State University, which is the cap sheaf of our public school system, is entitled to, and will, doubtless, receive at your hands that consideration which it has always received, and which will enable it to take front rank among the the institutions of America. If the necessity ever existed for a Missouri youth to leave his own State for educa-

tion, it should be removed by such judicious fostering of our own institution as will not only keep our boys and girls at home, but will draw to Missouri the ambitious of other states. I have conferred with Governor Stone, and I have read that portion of his message concerning the endowment fund for the University. I approve of the suggestions he makes to you on this subject."

In a Special Message sent in February, 1897, to the 39th General Assembly, earnestly advocating the endowment of the University, His Excellency, Governor Stephens, says:

"Under its present conditions the revenue of the University from endowments from the United States Treasury (known as the 'Morrill Fund') and from fees and rents, amounts to about \$102,000 per year. The current expenses of maintenance, including the proper and inevitable growth of libraries and laboratories, and a reasonable margin for putting up special buildings, as outlined in the biennial report just issued, exceeds this amount by at least \$100,000.....*

"As the fifth State in the Union, Missouri cannot afford to take a step backward, nor are we willing to stand still in this fight for the higher education of our children when the States adjoining us are doing as much for theirs....."

Finally, if our University is to keep pace with other State Universities, and if Missouri means to offer her children on her own soil as good education as is offered by other States, she must give her University in some form adequate permanent endowment for maintenance and support, and must provide buildings and equipment with greater liberality than has been shown in the immediate past. Our University cannot hold its own in the race for pre-eminence when other States are much more liberal in their appropriations. The accuracy of the figures given below can be easily verified. For the biennial period ending December 31, 1896, the income for two years of the following State Universities was as follows: Michigan \$800,000; Wisconsin \$770,000; Minnesota \$700,000; California \$660,000; Illinois \$550,000; Ohio \$504,000; Pennsylvania (estimated) \$1,000,000. All these are State Universities. Some four years ago a bill was introduced into the Legislature of Michigan increasing more than three times the annual tax for the maintenance and support of the University. Not more than three votes in House and Senate combined were cast against the measure. About two years ago the Ohio Legislature voted by a large majority to double the annual tax for the maintenance and support of her University. A year ago last winter the Legislature of California passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, which had, in addition to said tax, an interest-bearing endowment of more

*An attentive reading of this paragraph shows that the Governor means \$100,000 a year, or \$200,000 for each biennial period.

than four millions of dollars, and had recently received from private individuals promises of more than four millions of dollars for new buildings. Therefore, although the University had four millions of dollars in interest-bearing funds, and had received offers of four millions of dollars from private individuals for new buildings, and was receiving from the State for current expenses \$209,000 for each biennial period, the Legislature, in the midst of hard times, passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, so that it should yield thenceforth for each biennial period \$400,000. The assessed valuation of property in Missouri is almost exactly what it is in California. It is not our business in the annual catalogue to advertise the glories of other states and other Universities, but it is our duty to tell our own people plainly that if better provision is not made for their University, it will become a by-word and a reproach when compared with those of other states, and that the youth of our State must receive at home inferior educational advantages or must go over the borders of this commonwealth to Universities that are liberally supported by other States. Kansas, Wisconsin and Illinois are very close, and Lincoln, Nebraska (the seat of the University), is within two hours' ride of the northwestern border of Missouri.

Very truly,
JOHN D. VINCIL,
President Board of Curators.

The Board of Curators and the Faculty reserve the right to modify, without further notice, any offer made in this catalogue, if circumstances should render such change necessary, and will be bound by it in any event only for the session following the date of publication.

CORPORATION.

THE BOARD OF CURATORS.

R. B. OLIVER.....	Cape Girardeau.....	}	Term expires Jan. 1, 1899
G. B. ROLLINS.....	Columbia.....		
JAS. T. MOORE.....	Lebanon.....		
GARDNER LATHROP....	Kansas City.....	}	Term expires Jan. 1, 1901
O. D. JONES.....	Edina.....		
M. E. BENTON.....	Neosho.....		
JOHN D. VINCIL.....	St. Louis.....	}	Term expires Jan. 1, 1903
NOAH M. GIVAN.....	Harrisonville		
CAMPBELL WELLS	Platte City.....		

OFFICERS OF THE BOARD.

JOHN D. VINCIL.....	President
NOAH M. GIVAN.....	Vice-President
J. G. BABB,	R. B. PRICE,
Secretary.	Treasurer.

THE EXECUTIVE BOARD AT COLUMBIA.

NOAH M. GIVAN.....	Harrisonville
CAMPBELL WELLS.....	Platte City
G. B. ROLLINS.....	Columbia

THE EXECUTIVE COMMITTEE OF THE SCHOOL OF MINES.

JOHN D. VINCIL, Chairman.....	St. Louis
M. E. BENTON.....	Neosho
JAS. T. MOORE.....	Lebanon
M. F. FAULKNER,	D. W. MALCOLM,
Secretary.	Treasurer (office at Rolla).

THE BOARD OF VISITORS.

CHARLES E. YEATER.....	Sedalia
C. B. CORUM.....	Boonville
WALLACE ESTILL.....	Estill, Howard county
J. N. BALLARD.....	Montrose
W. O. ALLDREDGE.....	California

Faculty of the University.

Names are printed in order of appointment, except that of the President.
Those marked with a star [*] are names of officers or members of the
Faculty of the School of Mines and Metallurgy, at Rolla, Missouri.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediæval History.

PAUL SCHWEITZER, Ph. D., LL. D.,

Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,

Professor of Surgery and Diseases of Women and Children.

WOODSON MOSS, M. D.,

Professor of Anatomy and Practice of Medicine.

†WILLOUGHBY CORDELL TINDALL, A. M., M. S.,

Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARB BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

JAMES AULL YANTIS, LL. B.,

Professor of Law.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

ALEXANDER MARTIN, A. M., LL. D.,

Professor of Law, and Dean of the Law Faculty.

† Absent for session of 1897-8.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

JOSEPH PHILIP BLANTON, A. M., LL. D.,

Professor of Theory and Practice of Teaching.

JOHN MILLER BURNAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

†CHRISTIAN WILLIAM MARX, B. E.,

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. O., M. D.,

Professor of Physiology (Human and Comparative), and Veterinarian to the Experiment Station.

*ELMO GOLIGHTLY HARRIS, C. E.,

Professor of Engineering.

JOHN DAVISON LAWSON, B. C. L., LL. D.,

Professor of Law.

FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of History and Political Economy, and Dean of the Academic Department.

JOHN PICKARD, A. M., Ph. D.,

Professor of Classical Archæology, Assistant Professor of Greek, and Curator of the Museum of Classical Archæology.

FRANK THILLY, B. A., Ph. D.,

Professor of Philosophy.

‡HARRY THOMAS CORY, M. M. E., M. C. E.,

Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,

Acting Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

JOHN CHARLES WHITTEN, B. S.,

Professor of Horticulture, and Horticulturist to the Experiment Station.

†Absent for first semester of 1897-1898.

‡Absent for second semester of 1897-1898.

*ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

†WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),
Professor of Military Science and Tactics.

HENRY JACKSON WATERS, B. A. S.,
*Dean of the College of Agriculture and Mechanic Arts, and Director of the
Experiment Station.*

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLAKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

*EUGENE THOMAS ALLEN, Ph. D.,
Professor of Chemistry.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,
Professor of Elocution.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor of Electrical Engineering.

CURTIS FLETCHER MARBUT, B. S., A. M.,
*Assistant Professor (in charge) of Geology and Mineralogy, and Acting Cura-
tor of the Geological Museum.*

†Appointment expired Feb. 5, 1898.

*GEORGE EDGAR LADD, Ph. D.,

Director of School of Mines and Metallurgy, and Professor of Mining and Metallurgy.

*GEORGE REINOLD DEAN, C. E., B. S.,

Professor of Mathematics.

WILLIAM OPHUELS, M. D.,

Professor of Bacteriology and Pathology.

NORMAN COLMAN RIGGS, M. S.,

Acting Assistant Professor of Mathematics.

ABRAHAM PERRY BUFFINGTON (First Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

*PAUL JULIUS WILKINS, B. S.,

Instructor in Modern Languages.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

*ROBERT PEEL GARRETT, B. S., C. E.,

Instructor in Shop-work and Drawing.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

*GEORGE WALTER DEAN, B. S.,

Assistant in Chemical Laboratory.

*JOHN B. SCOTT,

Instructor in English.

*ALEXANDER FORSYTHE, A. B.,

Instructor in Metallurgy.

CHARLES THOM, A. B., A. M.,

Instructor in Botany.

THOMAS JACOB RODHOUSE, B. S.,

Instructor in Drawing.

CRAWFORD ELDER WHITE,

Instructor in Physical Culture.

- †A. E. HACKETT,
Lecturer on Climatology.
- ROBERT LEE REID, M. D.,
Teaching Fellow in Materia Medica.
- INEZ L. RIGGS, M. L.,
Teaching Fellow in Germanic Languages.
- HUGH ALLISON SMITH, B. L.,
Teaching Fellow in Romance Languages.
- ROYALL HILL SWITZLER,
Teaching Fellow in Mathematics.
- CLARENCE MARTIN JACKSON,
Teaching Fellow in Biology.

†In the service of the U. S. Weather Bureau.

SUMMARY.

Professors (including President and Deans) in actual service.....	36
Assistant Professors.....	7
Instructors.....	11
Teaching Fellows.....	5
Laboratory Assistant.....	1
Total.....	<u>60</u>

OTHER OFFICERS.

J. G. BABB, A. M., LL. B.,
• *Proctor.*

R. B. PRICE,
Treasurer.

IRVIN SWITZLER,
Registrar, Secretary to the Council and the various Faculties, and to the Experiment Station.

*M. F. FAULKNER,
Secretary to Executive Committee, School of Mines.

J. M. WHITE, A. B.,
Examiner of Schools.

WALTER K. STONE, A. B.,
Librarian.

MRS. LOUISE NORWOOD FITCH,
Matron.

MISS MARY B. IGLEHART,
Stenographer.

JOSEPH SHELBY MADDOX,
Assistant Librarian.

EDWIN ELGIN EVANS,
Assistant Librarian.

JAMES S. HOUSTON,
Assistant in Law Library.

ALLEN T. BROUGHTON,
Assistant in Law Library.

*MISS MAUD B. MITCHELL,
Assistant Librarian.

GEN. J. B. DOUGLASS,
Superintendent of Unsold College Lands.

For officers and staff of Experiment Station, see Index.

PREACHERS AND LECTURERS.

PREACHERS TO THE UNIVERSITY.

Rev. L. T. Sweeny, D.D., Indianapolis.....September 15-17, 1897.
Rev. W. H. Black, D.D., Marshall.....October 10, 1897.
Rev. W. A. Quayle, D.D., Kansas City.....January 9, 1898.
Rev. Jesse Bowman Young, D.D., St. Louis.....
Rev. O. M. Stewart, D.D., St. Louis.....April 10, 1898.
The pastors of the churches in Columbia at various times.

LECTURES BEFORE THE UNIVERSITY.

Normal Department:

Professor B. A. Hinsdale, Professor of the Science and the Art of Teaching, University of Michigan, "Garfield as Student and Teacher."

College of Agriculture and Mechanic Arts:

Hon. J. R. Rippey, of Columbia, Mo., Secretary Missouri State Board of Agriculture, "The Missouri Roadster—His Conformation, Breeding and Management."

Hon. N. F. Murray, of Oregon, Mo., Vice-President State Horticultural Society, "The Production of Nursery Stock." Twenty-four lectures and 24 laboratory exercises.

Hon. L. A. Goodman, of Westport, Mo., Secretary State Horticultural Society, "Commercial Orcharding and Small Fruit Growing." Twenty-four lectures and 24 laboratory exercises.

Ove Flaten, of St. Anthony Park, Minn., "Practical Dairy Management." Twenty-four lectures and 24 laboratory exercises in butter and cheese making.

Dr. T. E. White, of Columbia, Mo., State Veterinarian, "The Spread of Contagious Diseases and the State Quarantine Regulations." Twenty lectures.

A. E. Hackett, Esq., of Columbia, Mo., Assistant Director Missouri Climate and Crop Service, "Climatology." Twenty lectures.

GENERAL INFORMATION.

Departments of the University.

The University comprises the following departments:

- I—GRADUATE DEPARTMENT.
- II—ACADEMIC DEPARTMENT.
- III—NORMAL DEPARTMENT.
- IV—DEPARTMENT OF LAW.
- V—DEPARTMENT OF MEDICINE.
- VI—DEPARTMENT OF MILITARY SCIENCE AND TACTICS.
- VII—COLLEGE OF AGRICULTURE AND MECHANIC ARTS, embracing
 - A. *School of Agriculture;*
 - B. *Experiment Station;*
 - C. *School of Mechanic Arts;*
 - D. *School of Engineering;*
- VIII—THE SCHOOL OF MINES AND METALLURGY.

[These departments II to VIII are established and made co-ordinate by the statutes of Missouri.]

Historical Statement:

The University was located at Columbia, Boone county, June 24, 1839. The cornerstone of the Main building was laid July 4, 1840, and this is generally accepted as the date of the *foundation* of the University. Courses of instruction in Academic work were begun on April 14, 1841. A Normal department was established in 1867. The College of Agriculture and Mechanic Arts and the School of Mines and Metallurgy were made departments of the University in 1870—the School of Mines and Metallurgy being located at Rolla, where it was formally opened November 23, 1871. The Law department was opened in 1872; The Medical department in 1873; and the Engineering department in 1877. The Experiment station was established, under act of Congress, in 1888. The Missouri State Military School was created a department of the University in 1890. In 1868 the State gave aid for the first time to the University—a sum of \$10,000. On January 9, 1892, the Main building of the University at Columbia was destroyed by fire. In the following March the Legislature gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000 and by \$25,000 additional for a new building at Rolla. The 39th General Assembly appropriated \$33,000 to build an additional club-house at Columbia.

For a fuller statement about the College of Agriculture and Mechanic Arts, see Index.

A. THE DEPARTMENTS AT COLUMBIA.

REQUIREMENTS FOR ADMISSION BY EXAMINATION.

The following are the requirements for admission by examination to the various Departments:

To the Graduate Department :

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for. See announcement of this Department.

To the Academic Department :

The following are the requirements for admission by examination to the Freshman class in the Academic Department:

TO THE A. B. COURSE:

1. **LATIN.** Five books of Cæsar's Gallic War, four orations of Cicero, and Allen's Prose Composition. For two books of the Gallic War, eight books of Eutropius, or an equivalent of the *Viri Romæ*, may be substituted. Mastery of the essentials of etymology and syntax is expected.

2. **GREEK.** Three books of Xenophon's Anabasis, Harper and Castle's Greek Prose Composition, Goodwin's Greek Grammar.

The work may be accomplished in two years. A student may, for the session of 1898-99, substitute for the second year's work in Greek one year of history or one year of science. In that case he will be admitted if he is prepared to take up the Anabasis. White's First Greek Book will be useful for doing the first year's work.

3. **ENGLISH. A. In General.** No pupil will be accepted in English whose written work is notably defective in point of *spelling, punctuation, idiom, or division into paragraphs.*

B. English Composition.—(1) The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself, from a considerable number set before him in the examination paper. One of the topics chosen must be taken from the books assigned for general reading under English Literature. (2) In place of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of his school compositions, at least six in number, on topics taken from the prescribed course of reading, and certified to by his last English instructor as in his opinion the unaided work of the pupil.

C. English Literature.**1. For General Reading and Composition work:**

1898: Milton's "Paradise Lost" (Books I and II); Pope's "Iliad" (Books I and XXII); "The Sir Roger de Coverley Papers" in the "Spectator;" Goldsmith's "The Vicar of Wakefield;" "Coleridge's "Ancient Mariner;" Southey's "Life of Nelson;" Carlyle's "Essay on Burns;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1899: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the Mohicans;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1900: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger de Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the the Mohicans;" Tennyson's "Princess;" Lowell's "Vision of Sir Launfal."

2. For Minute and Critical Study:

1898: Shakspeare's "Macbeth;" Burke's "Speech on Conciliation with America;" De Quincey's "Flight of a Tartar Tribe;" Tennyson's "The Princess."

1899: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Carlyle's "Essay on Burns."

1900: "Macbeth;" "Paradise Lost" (I and II); Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

D. English Grammar.—There will be included in the requirement for entrance knowledge of the leading facts of English Grammar, and proper tests of such knowledge will be made a part of the examination.

4. MATHEMATICS. Algebra and Plane Geometry. The equivalent of Milne's High School Algebra and of Phillips and Fisher's Plane Geometry is required.

5. HISTORY. General History—the equivalent of the work given in Myers' "General History."

TO THE B. L. COURSE:

1. LATIN. Same as for A. B. See above.

2. ENGLISH. Same as for A. B.

3. MATHEMATICS. Same as for A. B.

4. SCIENCE. One year's work, with laboratory practice, in any one of the following Sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. HISTORY. (A.) General History (as above for A. B.); (B.) History of England—the equivalent of the work given in Green's "Short History of the English People."

TO THE B. S. COURSES:

1. FRENCH OR GERMAN—two years' work.

The two years' work in German, when offered, shall mean the ability to read at sight ordinary prose, to translate simple English sentences into German; and it includes a correct pronounciation of the language. The two years' work in French, when offered, implies the same ability in French as has been described above in German. For the French or German an equivalent amount of Latin may be substituted.

2. ENGLISH. Same as for A. B.

3. MATHEMATICS. Same as for A. B.

4. SCIENCE. One year's work each, with laboratory practice, in any two of the following Sciences: Biology (Zoology and Botany), Physics, Chemistry.

5. HISTORY. Same as for B. L.

The time to be given to each of the above requirements, and the character of the work required in each subject for admission to the Freshman class, are given in detail in the courses outlined for schools approved by the University. See pages 33-39.

Value in Units :

If a unit be defined as a year's work in a subject with five (5) periods a week in the class room or laboratory, and a period as about forty (40) minutes, then the subjects required for admission to the Freshman class have the following values in units: English, 3 units; Latin, 3; Greek, 2; Mathematics, 3; History, 1 or 2; Physics, 1; Chemistry, 1; Biology, 1.

The requirements for entrance by examination to the several Academic courses expressed in terms of units are as follows:

A. B.		B. L.		B. S.	
English.....	3 units	English.....	3 units	English.....	3 units
Math.....	3 "	Math.....	3 "	Math.....	3 "
History.....	1 "	History.....	2 "	History.....	2 "
Latin.....	3 "	Latin.....	3 "	French or Ger.	2 "
Greek.....	2 "	Science.....	1 "	Science.....	2 "
Total.....		Total.....		Total.....	
12 "		12 "		12 "	

In the B. S. course the student may offer for the two years of French or German two years of Latin. The University will for the present accept this substitution, but does not recommend it. In case the student presents but one year of Latin, he shall receive credit for that amount and shall then be conditioned on one year of French or German, which condition must be made up in addition to the requirements for the course. For the session of 1898-99 the applicant for admission may substitute for the second year in Greek in the A. B. course a second year in History or one year in Science. It should be understood, however, that no substitute may be offered for any

study unless the student has, in the entrance examination, made a passing grade on the substitute.

To be admitted to the Academic Department by examination, the student must pass (70 per cent.) on at least ten (10) units; on the other two (2) he may be conditioned; but no candidate who is conditioned or has failed in Mathematics will be admitted to Engineering courses. The deficiency of two units may be in one subject or in two. All conditions must be made up under the direction of the Professor in charge of that subject on or before June 1 of the Freshman year. If the student is permitted to make up a condition in the University, such work shall not count toward a degree.

In case the student offers advanced work (Freshman, Sophomore, etc.,) in any subject in lieu of units required for entrance, such substitution will be given due consideration; but students to whom this privilege may be allowed must make up those entrance requirements in which they are deficient.

To the Normal Department :

A student who has been admitted to any one of the Academic Courses will be permitted to enter the Normal Department.

To the Law Department :

For terms of admission see announcement of this Department.

To the Department of Medicine :

See announcement of this Department.

To the Schools of Agriculture and Mechanic Arts :

See announcement of these Schools.

To the School of Engineering :

The terms of admission to this School are the same as those of the B. S. Courses in the Academic Department.

Time of Examinations :

Examinations for admission will be held at the University May 27 to June 4, and September 8 to 12, 1898. All persons desiring to enter the University at the opening of the session in the fall of 1898, except those holding certificates of graduation from approved schools and those who have already otherwise fulfilled the entrance conditions, must present themselves at the Registrar's office, room 4, Academic Hall, at 8:30 a. m., Thursday, September 8. They will then receive complete directions as to examinations.

The program of examinations is as follows:

Thursday, September 8.—9 a. m., English; 2 p. m., Mathematics.

Friday, September 9.—9 a. m., Latin, French, German; 2 p. m., Physics.

Saturday, September 10.—9 a. m , Biology, Greek; 2 p. m., General History.

Monday, September 12.—10 a. m., English History; 2 p. m., Chemistry.

Acceptance of Grades :

Students who do not hold diplomas from approved schools (pages 28-33) , may present their grades in any subject, but the acceptance of these grades in place of an examination in that subject rests wholly in the judgment of the Professor of the subject.

Advanced Standing :

Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance; of his fitness for advanced work he must satisfy, by examination or otherwise, the Professor of the subject in which he wishes to take work higher than the Freshman.

Special Students :

Special students will be admitted to the University without passing the regular examination required for entrance under the following conditions: (1) They must be at least 21 years of age; (2) they must show good reason for not taking a regular course; (3) they must pass such examination or other tests as shall demonstrate fitness to pursue profitably all the studies in the subjects selected by them; (4) they will not be allowed to take work in more than two subjects with such kindred work as the head professors may suggest; (5) the advisory committee for each special student shall consist of the head professor or professors with whom the student desires to pursue work. Special students are expected to do specially good work in the two subjects which they choose. If at any period of the session their work becomes unsatisfactory in one or both of the two major subjects, their connection with the University shall be severed by the Dean of the Department.

Irregular Students :

Students who do not take the subjects required in any one course in the order laid down in the catalogue are classed as irregular students. They must, however, meet the regular entrance requirements.

ADMISSION FROM APPROVED SCHOOLS.

The following is a list of the Approved Schools. A diploma from any one of them entitles the holder to admission, without examination, to the Departments of Law or Medicine, to the Schools of Agriculture and Mechanic Arts, to the School of Mines, or to the Freshman Class of that course in the Academic and Engineering Departments for which he or she has been prepared:

Approved for all Courses in all Undergraduate Departments.

School.	Sup't and Principal.
Boonville High School, Boonville.....	D. T. Gentry.....
Buchanan College, Troy.....	W. F. Roberts.....
Butler Academy, Butler.....	John W. Richardson.....
Cameron High School.....	{ B. Riggs.....
	{ Miss Bertha Ensign.....
Chillicothe High School.....	{ Oliver Stigall.....
	{ John W. Barton.....
Oulver Military Academy, Oulver, Ind.....	A. F. Fleet.....
Columbia High School.....	R. H. Emberson.....
Hannibal High School.....	{ R. B. Simonson.....
	{ Miss Gertrude Ashmore.....
Kansas City High School.....	{ J. M. Greenwood.....
	{ E. C. White.....
Kemper Family School, Boonville.....	T. A. Johnson.....
Kirkwood High School.....	W. S. Dearmont.....
Michigan Military Academy, Orchard Lake..	W. A. Butts.....
Marshall High School.....	{ T. E. Spencer.....
	{ E. C. Fisher.....
Mary Institute, St. Louis.....	E. H. Sears.....
Paris High School.....	W. D. Christian.....
Quincy (Ill.) High School.....	Wm. F. Geiger.....
Sedalia High School.....	{ G. V. Buchanan.....
	{ J. D. Wilson.....
Slater High School.....	J. M. Bailey.....
Smith Academy, St. Louis.....	Chas. P. Curd.....
St. Joseph High School.....	{ Edward B. Neely.....
	{ C. E. Miller.....
St. Louis High School.....	{ F. Louis Soldan.....
	{ Wm. J. S. Bryant.....
University Academy, Columbia.....	{ G. B. Welch.....
	{ G. H. Beasley.....
Wentworth Military Academy, Lexington...	Sanford Sellers.....
Woodson Institute, Richmond.....	B. G. Shackelford.....

Approved for Law, Medicine, Agriculture, Engineering, School of Mines, and B. L. and B. S. Courses in the Academic Department:

School.	Sup't and Principal.
Appleton City Academy, Appleton City	G. A. Thielman
Bethany High School.....	J. R. Hale.....
Carthage High School.....	{ W. T. Stephens.....
	{ W. W. Walters.....
Carrolton High School.....	{ L. W. Rader.....
	{ Mrs. R. R. Quisenberry.....
Clinton High School.....	{ G. M. Holliday.....
	{ Ignatius McOutchan.....
East St. Louis (Ill.) High School.....	John Richeson.....
Ft. Smith High School, Ft. Smith, Ark.....	J. L. Holloway.....
Harrisonville High School.....	A. F. Treakle.....
Higginsville High School.....	W. C. Sebring.....
Independence High School.....	{ J. N. Patrick.....
	{ Wm. L. C. Palmer.....
Jefferson City High School.....	J. U. White.....
Joplin High School.....	{ J. D. Eliff.....
	{ J. M. Gwinn.....
Kansas City Manual Training School.....	G. B. Morrison.....
Lamar High School.....	D. L. Newkirk.....
Lancaster High School.....	W. C. Thompson.....
Lexington High School.....	H. D. Demand.....
Louisiana High School.....	{ A. W. Riggs.....
	{ R. R. Rowley.....

Schools.	Sup't and Principal.
Maryville High School.....	{ B. F. Duncan
Miami High School.....	{ C. A. Hawkins
Mexico High School.....	E. E. Barnett.....
Moberly High School.....	{ D. A. McMillan.....
	{ Miss M. E. Shea.....
	{ J. A. Whiteford.....
	{ J. C. Lilly.....
Monroe City High School.....	R. S. Nichols
Mound City High School.....	J. P. Coleman.....
Montgomery City High School.....	W. O. Williams.....
Nevada High School.....	{ A. W. Duff.....
	{ J. C. Pike.....
Oregon High School.....	D. L. Roberts
Richmond High School.....	{ L. J. Hall.....
	{ J. E. Dunn
Rockport High School.....	U. W. Gallaher.....
Shelbina High School.....	J. T. Vaughn.....
Springfield High School.....	{ J. Fairbanks.....
	{ W. T. Carrington.....
	{ H. E. DuBois.....
Trenton High School.....	{ W. C. Ryan.....
Webb City High School.....	A. G. Young.....
Westport High School.....	{ S. A. Underwood
	{ Sarah E. Steele.....

Approved for Law, Medicine, Agriculture, and for A. B. Course in the Academic Department.

Brookfield College, Brookfield.....	Harry C. Meyers.....
Carthage Fitting School, Carthage	L. E. Robinson.....
King City High School.....	P. O. Powell.....
Kidder Institute, Kidder.....	G. W. Shaw.....
Mt. Vernon Academy, Mt. Vernon.....	G. H. Pollard.....
Vandalla High School.....	T. B. Ford.....
Watson Seminary, Ashley.....	A. R. Coburn.....

Approved for Law, Medicine, Agriculture, School of Mines and for B. L. and A. B. Courses in the Academic Department.

School.	Sup't and Principal.
Marionville Collegiate Institute, Marionville.	M. L. Curl.....

Approved for Law, Medicine, Agriculture, School of Mines and for B. L. Course in the Academic Department.

Brookfield High School.....	{ L. A. Wirick.....
	{ B. A. Jones.....
Greenfield High School.....	J. M. Taylor
Rich Hill High School.....	J. P. Thurman.....

Where two names are given, the first is that of the Superintendent and the second that of the Principal.

Changes in Approved Schools:

Since the publication of the last Catalogue, the following changes have been made in the list of "Approved Schools:"

The Boonville High School, Paris High School, Slater High School, Quincy (Ill.) High School, Smith Academy, (St. Louis), and Mary Institute (St. Louis) approved for all undergraduate courses in all departments.

The Clinton High School, Jefferson City High School, Kansas City Manual Training High School, Oregon High School, and Webb City High School approved for Law, Medicine, Agriculture, Engineering and for the B. L. & B. S. courses in the Academic Department.

The Kidder Institute, Kidder, Lexington High School, East St. Louis (Ill.) High School, Carthage Fitting School, and Vandalia High School approved for Law, Medicine, Agriculture and for the A. B. course in the Academic Department.

The Rich Hill High School, Brookfield High School, Greenfield High School approved for Law, Medicine, Agriculture and for the B. L. course in the Academic Department.

The King City High School and Watson Seminary, Ashley, approved for Law, Medicine, Agriculture and for the A. B. course in the Academic Department.

For Further Changes in the List of Approved Schools, see page VI.

Approved for Department of Medicine.

In addition to the foregoing Schools, the following High Schools, Colleges, Academies and Institutes have been approved for Medicine, and their graduates will be admitted to this Department without examination in the fall of 1898:

Albany High School.	Charleston High School.
Appleton City High School.	Christian Brothers College, St. Louis.
Bellevue Collegiate Institute, Caledonia.	Christian Orphan School, Fulton.
Belton High School.	Christian College, Columbia.
Bishop Robertson Hall, St. Louis.	Christian College, Weaubleau.
Bolivar High School.	Corder High School.
Bowling Green High School.	Cottey College, Nevada.
Brunswick High School.	De Soto High School.
Butler High School.	Doniphan High School.
California High School.	Elzberry High School.
Canton High School.	Eldorado Springs High School.
Carruthersville High School.	Excelsior Springs High School.
Centralia High School.	Fayette High School.
Central Wesleyan College, Warrenton.	Ferguson High School.
	Fulton High School.
	Gallatin High School.

Granby High School.	Plattsburg College, Plattsburg.
Hamilton High School.	Plattsburg High School.
Hardin College, Mexico.	Pleasant Hill High School.
Hopkins High School.	Poplar Bluff High School.
Hosmer Hall, St. Louis.	Presbyterian College, Avalon.
Howard Payne College, Fayette.	Pritchett College, Glasgow.
Hume High School.	Ridgeway High School.
Huntsville High School.	Rugby Academy, St. Louis.
Kahoka High School.	St. Louis Seminary, Jennings.
Kingston High School.	St. Paul's College, Concordia.
Kirkville High School.	St. Vincent's College, Cape Girardeau.
Kirkwood Military Academy, Kirkwood.	Salem High School.
Lamar College, Lamar.	Savannah High School.
La Plata High School.	Scarritt Collegiate Institute, Neosho.
Lee's Summit High School.	Shelbyville High School.
Liberty High School.	Stanberry Normal, Stanberry.
Liberty Female College, Liberty.	Stephens College, Columbia.
Lindenwood College, St. Charles.	Sweet Springs High School.
Macon City High School.	Tarkio High School.
Malden High School.	Thayer High School.
Manual Training School, St. Louis.	Tipton High School.
Maryville Seminary, Maryville.	Toensfeldt Educational Institute, St. Louis.
Megquyer Seminary, Boonville.	Unionville High School.
Memphis High School.	Versailles High School.
Neosho High School.	Walther College, St. Louis.
New London High School.	Warrensburg High School.
Odessa High School.	Washington High School.
Osceola High School.	Webster Grove High School.
Otterville College, Otterville.	West Plains College, West Plains.
Peirce City Baptist College, Peirce City.	Willow Springs High School.
Peirce City High School.	Woodland College, Independence.

Approved for Department of Law and Schools of Agriculture and Mechanic Arts:

In addition to the foregoing schools the following High Schools, Colleges, Academies and Institutes have been approved for Law, Agriculture and Mechanic Arts, and their graduates will be admitted to these Departments without examination in the fall of 1898:

Adrian High School.	Avalon College, Trenton.
Ash Grove High School.	Baptist College, Webb City.
Aurora High School.	Baptist Female College, Lexington.

- Bevier High School.
 Breckenridge High School.
 Bonne Terre High School.
 Buffalo High School.
 Carleton College, Farmington.
 Cartersville High School.
 Cassville High School.
 Centenary College, Palmyra.
 Central Christian College, Albany.
 Central Female College, Lexington.
 Chillicothe Normal and Business
 Institute, Chillicothe.
 Clarksburg College, Clarksburg.
 Clinton Academy, Clinton.
 College of St. Joseph, St. Joseph.
 Craig High School.
 Crystal City High School.
 Dadeville Academy, Dadeville.
 Edina High School.
 Elizabeth Aull Seminary, Lexington.
 Evangelical Lutheran Parochial
 School, Altenburg.
 Farmington High School.
 Female Orphan School, Camden
 Point.
 Glasgow High School.
 Golden City High School.
 Grand River College, Edinburg.
 Grant City High School.
 Hardin High School.
 Hermann High School.
 Higbee High School.
 Holden High School.
 Hooper Institute, Clarksburg.
 Jackson High School.
 Jamesport High School.
 Keytesville High School.
 King City High School.
 Lamonte High School.
 La Salle Institute, Glencoe.
 Lathrop High School.
 Lebanon High School.
 Linneus High School.
 Madisonville High School.
 Marceline High School.
 Marionville High School.
 Marshfield High School.
 Mayfield Smith Academy, Marble
 Hill.
 Maysville High School.
 Meadville High School.
 Missouri Wesleyan Institute, Cam-
 eron.
 Monett High School.
 Mountain Grove High School.
 Mt. Vernon High School.
 North Missouri Institute, Salisbury.
 Northwest Missouri College, Albany.
 Odessa College, Odessa.
 Palmyra High School.
 Pattonsburg High School.
 Perry High School.
 Pike College, Bowling Green.
 Pleasant Hope Normal Academy,
 Pleasant Hope.
 Prairie Home Institute, Prairie
 Home.
 Presbyterian College, Independence.
 Presbyterian College, Lawson.
 Princeton High School.
 Queen City High School.
 Republic High School.
 Rolla High School.
 Sacred Heart Academy, St. Joseph.
 St. Cecilia's Seminary, Holden.
 St. Peter's Parochial School, Jeffer-
 son City.
 St. Charles College, St. Charles.
 St. Charles High School.
 St. Peter's School, Washington.
 Salem High School.
 Salisbury Academy, Salisbury.
 Salisbury High School.
 Sarcoxie High School.

Schell City High School.

Seneca High School.

Sikeston High School.

Southwest Baptist College, Bolivar.

Stanbury High School.

Stockton High School.

Sturgeon High School.

Synodical College, Fulton.

Waverly High School.

Wayne Academy, Piedmont.

Weingarten School, Weingarten.

Wellsville High School.

Weston High School.

West Plains High School.

Windsor High School.

The Missouri School for the Deaf and Dumb, at Fulton, has been approved for the College of Agriculture and Mechanic Arts, and the graduates will be admitted without examination to the first year's course in Agriculture and Mechanic Arts.

Normal Schools:

Graduates of the three State Normal Schools in the advanced Latin course of study as recently established will be admitted to the University without examination and permitted to enter without condition the Freshman Class in the B. L. and B. S. Courses in the Academic Department, and the Freshman Class in Engineering. They may also enter the Departments of Law and Medicine, and the School of Agriculture, and the School of Mines at Rolla. In any course, they may enter as much higher than Freshman as in the judgment of the Professors their qualifications permit.

Examiner of Schools:

The position of Examiner of Schools has been established by the Board of Curators to facilitate the work of bringing the secondary schools into close connection with the University. Mr. J. M. White, of Carthage, entered upon the duties of this office at the beginning of the year 1897. Superintendent Kirk, in the 47th "Report of the Public Schools," speaks as follows of this office: "I look upon the office of High School Examiner for the University as one the most important ever created by that institution. It will, without doubt, aid in bringing all secondary schools into more intimate and definite relation with the University and with other institutions of high learning."

CONDITIONS FOR THE APPROVAL OF SCHOOLS.

Hereafter schools will be approved for the A. B., B. L., B. S. and Engineering courses upon the adoption of the corresponding scheme of study as outlined on page 39, and the sign that this course has been adopted will be an agreement between the University and the school authorities. This agreement is to be signed on the one hand by the President of the University, and on the other hand by the Principal of the High School, the President of the School Board, and the Superintendent of Public Schools of the

town in which the High School is situated. In the case of Private Schools or Colleges, it should be signed by the Principal or President, and by the President of the Trustees. Printed copies of this agreement will be sent to any school seeking approval. It specifies—

1. That the school authorities have made their course of study meet fully the requirements proposed by the University.

2. That the first diploma issued under the new course of study will bear a specified date.

3. That the employment of inefficient teachers in the school will at any time justify the University in severing the relation.

4. That the University on its part will, after the date specified, admit without examination to the Freshman Class in any Course for which they have been duly prepared, such graduates of the school as bring proper credentials of the fact that they are recommended for that class by the school authorities; and it will admit free of tuition for the first year the student graduating from the school with the highest honors. The credentials will be (1) the diploma of the school; (2) a certificate from the Superintendent or the Principal stating that the diploma was won in a course for which the school has been approved. Forms of certificates are furnished by the University.

5. That the University will send from time to time representatives of the Faculty to visit the school, and will endeavor to promote, in every way possible, its welfare.*

It is distinctly understood that the Course of Study outlined below is a minimum course. It is earnestly hoped that all the Secondary Schools of Missouri will soon be able to make their courses four years long. Many branches of study usually taught in Secondary Schools are not mentioned below. The Course prescribed gives not what should be taught in these schools, but merely the minimum required by the University for entrance to its Freshman class.

1. *Latin*, not less than five (5) periods a week, continued not less than three (3) years.

In this time it is expected that the student will acquire such a vocabulary and such a knowledge of inflections and syntax as to be able to read readily simple Latin prose, with accurate quantitative pronunciation of the words. The best method of reaching these results cannot be given here. They will be found fully stated in the "Report of Committee on Secondary Schools" in the section on Latin. It may be said, however, that correct pronunciation in the teacher is indispensable to correct pronunciation in the pupil, and that in the acquisition of a vocabulary and the mastery of inflections, nothing can take the place of the frequent reviews.

*The University has now a regularly appointed representative in the Examiner of Schools. See page 33.

It is expected that the student in three years will read five books of Cæsar's Gallic War and four of Cicero's Orations. For two books of the Gallic War, eight books of Eutropius or an equivalent in time of the *Viri Romæ* may be substituted where it is preferred.

If the students are immature, it will be found best to use some simple beginner's book, and to follow this by Eutropius or *Viri Romæ* as a bridge to Cæsar. If, however, the students are mature, it will be found that no bridge to Cæsar is needed, provided that some strong beginner's book is used and the students are required to master it before taking up Cæsar.

The reading should be accompanied by a careful and systematic review of grammatical forms, and by a study of the leading principles of syntax. At least one exercise a week should be given to rendering English into Latin. The Roman method of pronunciation is strongly recommended, and teachers are urged to give strict attention to accurate pronunciation according to quantity from the outset. Students will be admitted who have not been trained in the Roman method; but they will work at a great disadvantage throughout the entire course. The Mythology of Greece and Rome and the history of the Roman people should be carefully taught. Map-drawing is valuable for impressing upon the mind the geography of the Ancient World.

2. *English*, not less than five (5) periods a week, continued not less than three (3) years. It is recommended that one-half of the time allotted to English be given to the study of literature, by which is meant not the study of a manual on the history of literature, but literature itself in the selected works of representative authors. Masterpieces, as a whole, suited to the attainments of the class, should be read in class and carefully examined, while other works may be assigned as collateral reading, of which written reports should be required.

In the first year, along with the literature, frequent practice in Composition, with or without a text-book on Rhetoric, is strongly urged.

In the second year, the literature is to be continued throughout, and with the exercises in Composition, formal Rhetoric may be introduced, or if previously begun, continued. In the teaching of Composition and Rhetoric, chief emphasis should be thrown upon practice in writing. If formal Rhetoric is taught as a separate discipline, it should be of an elementary character, and contributory to the Composition.

In the third year, along with literature and composition, grammar, based on historical principles, might be profitably studied. In case English is extended through four years, such grammatical study, in our judgment, should be postponed until the last year.

In the fourth year, in connection with a wider range of reading in literature, an outline or syllabus or a brief history of the literature may

be conveniently used, but, possessing little or no culture value, it should always be subordinated to the study of literature itself, and reserved, if used at all, for the last year of the course.

If only three years be given to English, the course outlined for these three years will have taken into view English (1) as a means of expression, (2) as a literature, (3) as a language—all so intimately connected, however, that the proper study of each will bear indirectly upon the other two.

NOTE.—Excellent and inexpensive editions of English and American Classics are now offered by many of our publishing houses. The teacher of English will, doubtless, have a preference for one or another of these series, or for some works of one series and some of another.

3. *Mathematics*, not less than five (5) periods a week, continued not less than three (3) years, and devoted exclusively to Algebra and Geometry. Any other study in Mathematics given in addition to these must be given in additional time. In these three years it is expected that the student will finish Algebra and Plane Geometry. We require the full equivalent of what is contained in Milne's High School Algebra and Phillips and Fisher's or Bowser's Plane Geometry. Bright students, under good instruction, will be able to finish in the three years the Algebra, Plane Geometry and several books (if indeed not the whole) of Solid Geometry. For the fourth year we recommend that Solid Geometry be completed, and also Plane Trigonometry.

4. *Science*.—It is expected that not less than five (5) periods a week for an entire year be given to each of two sciences. Of the five periods, at least three (3) should be devoted to laboratory work. For this no outside preparation is required of the pupil. The remaining periods may be given to text-book work and lectures and experiments illustrating the text. The two Sciences must be taken from this group—Biology (Botany and Zoology), Physics, and Chemistry. If Biology be chosen, half a year may be given to Botany and half a year to Zoology; but we recommend that the whole year be given to either one or the other of these branches of the subject. We recommend that every school teach all three of these Sciences, and moreover provide good instruction in Physical Geography and Meteorology.

NOTE.—During the summer of 1898 a Summer School will be conducted at the University, in which Laboratory courses of six weeks each will be given in Biology, Physics and Shopwork. These courses are designed to prepare teachers to give instruction in these sciences in the Secondary Schools of the State, and especially in those schools which are approved by the University or which are seeking approval. For further particulars see Appendix.

5. *History*, not less than five (5) periods a week for two (2) years. The first year shall be devoted to General History equivalent to the work given in Myers' General History. The second year shall be devoted to the History of England equivalent to the work given in Green's "Short History of the English People."

It is impossible to understand the life, the literature or the institutions of the ancient world without an accurate study of Mythology. We therefore recommend that every school make provision for this most important study. Some schools may see fit to combine it with the study of History, others with that of Literature, and others may prefer to give four periods a week to Latin or Greek, and the fifth period of each week to Mythology. Other schools may provide for it in other ways. But, in our opinion, no school should, under any condition, omit adequate treatment of the subject. There are some excellent text-books. We especially recommend Guerber's "Myths of Greece and Rome." Invaluable auxiliary reading may be found in Church's Stories from Homer, Virgil, Herodotus, the Greek Tragedians, etc. Any school would be amply repaid by adding to its library, without further inquiry, any book of stories bearing the name of Alfred J. Church. Some of them are in Macmillan's School Library, and most of them are published by Dodd, Mead & Co., New York. Teachers of the classics find in them quite as much pleasure as their pupils.

6. *Greek*, not less than five (5) periods a week for not less than two (2) years.

In this time the student is expected to learn thoroughly the declension of nouns and adjectives, the conjugation of verbs and the ordinary principles of syntax. He should be able to read with facility ordinary Greek prose, such as Xenophon's *Anabasis*, and to translate easy sentences from English into Greek. The knowledge of the accent must be insisted on. To secure this end, we recommend for the first year:

White's First Greek Book and Gleason's Gate to the *Anabasis*, (Ginn & Co., Chicago).

For the second year:

Goodwin's Greek Grammar (Ginn & Co., Chicago); Xenophon's *Anabasis* (three books), Harper and Wallace (American Book Co., Chicago); Harper and Castle's Greek Prose Composition.

This requirement is made of those schools only which desire to prepare students for the Freshman class of the A. B. course.

Any school that gives two years' instruction in Greek, as outlined above, may omit all instruction in Science; but we strongly *recommend* that every school, besides teaching Greek, give at least one year to thorough work in at least *one* of the Sciences mentioned above under No. 4. For the A. B. course, Biology will prove most valuable.

7. *Modern Languages*.—Schools which prepare students for the B. S. course or for the Engineering courses should give two years' work in German or two years' work in French, instead of two years' work in Latin.

The requirements in French or German represent an amount of knowledge which should be gained by two years of consecutive study, five times a week. Thorough acquaintance with the elements of the grammar is of

course expected. In addition, a considerable amount of proficiency in translating at sight into English will be required. To obtain this proficiency, students must have careful and systematic training in reading at sight, and this should be begun during the first months of study. In addition to the above, a good pronunciation is insisted on.

In German, Joynes-Melssner's Grammar, and in French, Chardenal's, are the books adopted by the State. As for texts, nearly all the publications of the following firms are recommended as excellent: Ginn & Co., Holt & Co., Heath & Co., Allyn & Bacon, W. R. Jenkins, Macmillan, Christopher Sower & Co. (Philadelphia).

We earnestly recommend that under no circumstances shall any school require of its pupils more than 20 periods of work a week demanding preparation. We think less than this advisable. Ample time should be given for reading, and every Secondary School should contain a good library as well as good laboratories. A library may be rather small and still good. If possible, a librarian should be employed to do nothing else but keep the books and help the pupils in their choice of reading matter.

By a "period" we mean 40 minutes of time devoted to actual teaching, with 5 minutes more for changing class—the total 45 minutes.

By "session" we mean about 9 months.

This is all in amount that for the present at least the University requires for approval; but as to teachers, we strongly recommend that English and Latin on the one hand and Mathematics and Science on the other hand be taught by graduates of Universities or Colleges of unquestionable reputation, or by those who have taken equivalent courses in these subjects.

Schools should provide rooms, fixtures, and apparatus suitable for laboratory work, without which it is impossible to teach science well, but it should be remembered that in the equipment of a laboratory the first step is to secure a thoroughly competent teacher. If it be desired, the University will gladly forward information about the proper equipment of laboratories, or will even send a Professor to aid the school in completing its original outfit.

It is of great importance that only good text-books be used, and information about them is always cheerfully given.

All of the courses recommended by the "Committee of Ten" involve the study of at least one Modern Language. In the teaching of Modern Languages we desire to emphasize the importance of thorough and accurate drill in pronunciation. In Greek, the pronunciation should be strictly according to the printed accent, and in both Latin and Greek much pains should be taken from the first to distinguish in pronunciation short and long syllables. Phonology is of great importance in the study of languages.

Summary of Requirements for Approval for the Various Courses :

<i>A. B.</i>		<i>B. L.</i>		<i>B. S. and Engineering.</i>	
Latin.....	3 years.	Latin.....	3 years.	French or Ger.	2 years.
English.....	3 “	English.....	3 “	English.....	3 “
Math.....	3 “	Math.....	3 “	Math.....	3 “
Greek.....	2 “	History.....	2 “	Science.....	2 “
History.....	1 “	Science.....	1 “	History.....	2 “

For the A. B. course an additional year of History may be substituted for the second year of Greek. For the B. S. and Engineering courses two years of Latin may be substituted for the German or French.

When a school has been approved for any one of these courses its diploma will be accepted also for admission to the Normal Department, the Departments of Law and Medicine, the Schools of Agriculture, Mechanic Arts, and Mines and Metallurgy.

ORGANIZATION AND EQUIPMENT.

Organization and Government:

The University Council consists of the President, the Deans, Professors and Assistant Professors, in all the Departments of the University. It is the highest organized body of the Faculty. Each Department of the University has its special Faculty, consisting of the Professors and other Teachers who give instruction in it.

The President is the executive head of the University, and is a member of all the Faculties.

Buildings and Equipments:

Location.—The University of the State of Missouri is located near the center of the State, in Columbia, a town of about 5,000 inhabitants, situated half way between St. Louis and Kansas City. The surrounding country is elevated, well drained and diversified. It is a limestone region, remarkable for its healthfulness. The University Campus includes 82 acres of undulating ground in the southern part of the town. The Experiment Farm lies one square south of the Campus, and comprises 768 acres. The Horticultural grounds (a part of the Farm) are one square east of the Campus and include about 30 acres.

Buildings.—The University has the following buildings:

The Observatory, Medical building, four Club-houses, Agricultural Farm buildings, Experiment Station, Greenhouse (new), Law building (new), Chemical Laboratory (new), President's house (1867), Museum (new), Agricultural College (1871), Engineering (new), Mechanic Arts (new), Power-house (new), Academic Hall (new).

We give a brief description of our *new* buildings:

The Law building, 68x114 feet, contains two stories and a basement. Its library rooms are large and well lighted.

The Chemical Laboratory, 132x90 feet, is equipped with a system of exhaust ventilation capable of effecting a change of air every ten minutes.

The Museum, 140x100 feet, contains in the center the Museum proper, 37x100 feet, two stories high, and entirely fire-proof. On the right is the department of Geology and Mineralogy, and on the left that of Botany and Zoology. These wings have six and eight rooms respectively, one of which is a large lecture hall, 28x40 feet.

The Engineering building, 145x78 feet, is arranged for Physics, and for Civil, Mechanical, and Electrical Engineering. It has 32 rooms, in addition to two lecture halls, 28x40 feet.

The Mechanic Arts building, 108x117 feet, has six shop-rooms, 40x40 feet; an exhibit hall, 25x40 feet; two offices, 16x18; one drawing-room, 40x40; store-rooms, an engine-room, etc. The machinery is driven by a 60-horse power Corliss engine supplied with steam from the Power-house. The building is lighted from a dynamo in the basement, and is thoroughly ventilated by a fan.

The Power-house, 72x86 feet, contains a plant of five boilers aggregating 600-horse power. From this plant all the buildings are heated by a system of brick tunnels six and a half feet high by four broad. Through these tunnels are carried steam and water pipes and electric light wires.

The new Horticultural Laboratory consists of a central building 30x30 feet and two wings, each 22x30 feet. It is heated by steam, and is so arranged that each compartment maintains a different temperature. Thus it is possible to grow plants that require various degrees of heat. The boiler-house is a separate building, of such size and arrangement that additional steam may be put in for heating three or four times the present area under glass. The entire laboratory is constructed after approved modern methods. It has stone foundation below ground, pressed brick walls to a height of three feet, T iron frame filled in with white pine, grooved sash bars, and best American A glass. The glass walls of the main portion rise eight feet above the brick, and the roof slopes upward to twenty-seven feet above the ground floor in the center, giving room for tall tropical plants. The walks between the benches are of granitoid. It is water-proof.

The new Academic Hall, 319 feet long, with a chapel in one wing and a library in the other, contains three stories, besides a basement seven feet above ground. It is provided with appliances for direct and indirect heating, with fans for ventilation, and with thermostats for the regulation of temperature. The auditorium, 74x113 feet, seats comfortably 1,500 people. The apartments (six in number) for the exclusive use of young women, contain everything conducive to study, comfort, and indoor exercise.

The principal buildings of the University are grouped around a quadrangle near the center of the Campus. The quadrangle is open toward the north, with department buildings on the sides, and the large Academic

Hall closing the south end. In the center are the grand old Ionic Columns that supported the original Academic Hall erected in 1840 and destroyed by fire on Jan. 9, 1892. The buildings are substantially built of red pressed brick, with stone trimmings. They have division walls of brick, roofs of slate, ceilings of cement laid on steel laths, and floors of tile or of polished maple. They are heated by steam, lighted by gas and electricity, and are all supplied with water by the city water-works. The University has built at its own expense an admirable system of sewers.

Libraries.—The General University Library consists of 24,454 bound volumes, carefully selected, and 32,642 unbound pamphlets and reports. The best literary and scientific periodicals are taken, and a large number are given yearly (see Index, under "Gifts to the University"). The Law Library, of about 4,000 volumes (included in the above estimate), is in the Law building. The Medical Library receives regularly a number of medical periodicals. Moreover, each Chair has its special technical library.

Laboratories and Museums.—Facilities for practical instruction in the sciences are provided in the museums of Zoology, Geology, and Agriculture, and in various laboratories. The University has now in regular use twenty laboratories of science and technology, and four drawing-rooms, one general and three special. The laboratories are as follows :

CHEMISTRY: Four Laboratories—General Chemistry (1st year), Qualitative Analysis, Quantitative Analysis, Agricultural Chemistry and Experiment Station work.

PHYSICS: Three Laboratories—For work of different grades, besides small rooms for special work.

MINERALOGY AND GEOLOGY: Two Laboratories.

ASTRONOMY: A well equipped Observatory for practical instruction and observation on the part of the students. See Index, under "Observatory."

BIOLOGY: Two Laboratories—One for General Biology, and one for advanced work of various grades.

ENTOMOLOGY: One Laboratory.

PHYSIOLOGY: One Laboratory.

ANATOMY: One Laboratory.

BACTERIOLOGY: One Laboratory.

HORTICULTURE: One Laboratory.

ENGINEERING: Three Laboratories—For Civil, Electrical, and Mechanical Engineering, besides smaller rooms for special work.

SHOPS: Four—One for bench work in wood, a forge room, a wood lathe room, and a machine shop. See Index.

DRAWING ROOMS: One for general drawing, and three for special drawing in Civil, Electrical, and Mechanical Engineering, respectively.

Each of the Laboratories, Museums, Shops and Drawing Rooms mentioned above occupies at least one room, and in some cases more.

Experiment Station.—The Agricultural Experiment Station is on the Horticultural grounds. Bulletins giving the results of experiments are issued at intervals. The Station is provided with an outfit of meteorological instruments, and daily observations are made by an officer of the U. S. Weather Bureau. See Index, "Experiment Station."

Club-houses.—The University has four club-houses which furnish about 200 young men with rooms and board, and about 200 more with board only. Two of these are substantial brick buildings on the Campus, affording accommodations for about 165 students. The other club-houses are wooden buildings, and have rooms for 45 students.

The 39th General Assembly appropriated \$33,000 for the construction of an additional club-house, included in those mentioned above. This building will accommodate about 70 lodgers, and will be completed about June 1, 1898.

For information about the buildings and equipment of the School of Mines and Metallurgy at Rolla, see Index.

Lectures and Recitations:

Lectures and recitations in all departments, except that of Law, are held on six days in the week. By the new schedule of hours the student's work has not been increased, but has been more evenly distributed.

Religious Exercises:

Religious exercises are held every morning in the University Chapel. They consist of a hymn by the choir, readings from the Old and New Testaments, a brief prayer, and a closing hymn by the congregation.

These exercises are made as attractive and beneficial as possible. During the present session distinguished members of various churches have been invited to preach to the students and Faculty.

In Columbia there are churches of nearly all the prominent denominations. The University advises its students to attend regularly the services at the churches of their parents. The students maintain an efficient chapter of the Young Men's Christian Association, and one also of the Young Women's Christian Association. (See "Societies" below.) The University has much of moral and religious influence, but is non-sectarian.

Provisions for Young Women :

All departments of the University are open to women. In the lecture-rooms they receive the same instruction and meet the same intellectual requirements as the young men. There are special rooms—six in number—furnished with admirable equipment for health and comfort, and presided over by a matron, who has charge of all the young ladies in attendance. One of these rooms is fitted up as a gymnasium, containing all the appli-

ances necessary for physical culture. During lecture hours the young ladies, when not attending lectures, are expected to be in their waiting-rooms, or in the University library, or at their respective homes.

The University has no boarding department; but many of the families of Columbia take boarders, and students find no trouble in securing, at reasonable rates, the comforts and refinements of home life.

STUDENTS.

Discipline:

In the government of the University, the President and the Faculty rely chiefly upon the sense of duty of the student corps. The student is expected to pursue his studies with diligence, to attend classes regularly, and to live in the exercise of morality and good behavior. The removal of those who fail to meet these requirements is demanded in the interest of the University and the better class of students. Students are under the direct supervision of the University only when on the Campus, but they are responsible for their conduct wherever they may be.

Directions for New Students:

1. New students will first present themselves for examination. This should be done *before paying entrance fees*. For dates of examinations, see the Calendar, page 111.

2. After passing the entrance examinations, the students must pay to the Treasurer the amount required. See "Expenses," page 45.

3. The Treasurer's receipt should be at once presented to the Proctor, who will enroll the student's name and give to him his class-card, with instructions how to have it filled.

4. If assistance is needed in obtaining board, application should be made to the Proctor.

STUDIES.

Regulations in Regard to Studies:

No student in any department of the University may have more than 18 hours a week in the lecture room, unless the course prescribed for the year requires a greater number of hours and he is following that course exactly.

Academic students are expected to spend not less than 15 nor more than 18 hours a week at lectures or recitations.

One hour in the lecture-room is considered equal to two and one-half in the laboratory, the drawing-room, the shop, and the commercial-room.

Class-cards taken out at entrance must be properly filled, countersigned, and deposited with the Registrar, within three days after they have been issued. In all departments cards are signed by the Dean first and then by the President.

Students that enter the University in the first semester and wish to make any change in their class-cards for the second semester, are required

to take out their cards again in the last week of the first semester, and to return them to the Registrar duly filled and approved on or before Tuesday, the first day of the second semester. Students that fail to comply with this requirement must pay a fee equal to one-half of the regular fees for the session, unless the delay has been unavoidable.

Studies in Other Departments :

Students registered in one department may take work in other departments for which, in the judgment of the Professors concerned, they are prepared; but only with the consent of the Dean or the Advisers of the department in which the student is registered. Students taking work in another department than that in which they are registered are subject as respects this work to the rules of the department in which the work belongs.

1. Academic students may take Anatomy or Physiology, or both, in the first year of the Medical course, or Bacteriology in the second year; Drawing, Book-keeping, Shop-work, and any other work not below the Freshman (Academic) grade, in the College of Agriculture and Mechanic Arts; and any instruction offered in the Normal department. None of this instruction, however, shall count toward any Academic degree unless it is allowed in the regulations respecting studies for such degree.

2. Law students may take any instruction offered in other departments of the University, but it shall not count toward any degree in Law.

3. Medical students in the first year may take any work offered in the Academic department, and the College of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but such work shall not count toward the degree of M. D., unless it is included in the regular Medical course.

4. Students in the Schools of Agriculture and Mechanic Arts may elect in the Junior years the courses in Physiology and Hygiene from the first year of the Medical course, and from the Academic or Normal department any subject for which they are prepared, and which is germane to the work of the Schools. Electives taken as indicated count toward the degree of B. Agr.

5. Engineering students may take in their Freshman and Sophomore years any instruction offered in the Academic department, the Normal department, in the Schools of Agriculture and Mechanic Arts, or Anatomy and Physiology in the First year of the Medical course; and in their Junior and Senior years they may take anything offered in the University; but such instruction shall not count toward a degree in Engineering.

6. No work shall count toward the Normal diploma, except so far as it may conform to the requirements specified in the announcement of the Normal department.

7. Instruction in Military Science and Tactics is open to students in all departments.

Graduate Studies :

A number of graduate courses are offered. For details see announcement of Graduate Department.

Examinations :

1. Examinations at the end of each semester close the studies pursued to that point. Re-examination for change of grade when the grade is 70 or more shall not be allowed in any case. For all successful examinations for the removal of conditions, i. e., where the first grade received is above 50 and below 70, the grade of 70 shall be given.

2. All special examinations, except for change of grades, and the acceptance of grades from other institutions, are in the discretion of the professors.

Class Honors :

The honor of valedictorian is awarded in the various departments to that student who has the highest grade.

In granting degrees, the following distinctions are made: Students graduating with a final average grade of 70 and below 90 receive the diploma; those graduating with a final average of 90 and below 95 have inserted in their diplomas the words *cum laude*; those graduating with a final average grade of 95 or more have inserted in their diplomas *magna cum laude* or *summa cum laude*. But misconduct or unexcused absences may forfeit the right of any student to such distinction.

Reports :

From all departments, except those of Law and Medicine, reports of students are sent, at the close of each semester, to the parents or guardians, showing their standing in the subjects that they are pursuing.

EXPENSES.

Fees and Deposits :

Academic students and those in the School of Agriculture pay an entrance fee of \$10, and library and incidental fees amounting to \$10.

Law students (regular or special) pay \$50 a year. Students entering the Junior class late will not be entitled to any reduction in the amount of the fee, except as stated below. Books costs about \$35 a year.

The Medical student pays \$20 for the first year; for the second year, \$50; for the third year, \$50.

The Engineering student pays \$20 for the Freshman, and the same for the Sophomore year; for the Junior and Senior years he pays \$50 each. If he takes one professional study or two studies of any kind from the Junior or Senior year, he must pay \$50.

State Cadets in the Academic Department or in the College of Agriculture and Mechanic Arts, including the School of Engineering, pay neither

entrance nor library and incidental fees; but if they take laboratory work they must make the required deposits. In all other departments of the University they pay the regular fees. If they take any study in Law or Medicine whatsoever, they must pay the full fees of that department.

Graduate students in any department of the University pay fees amounting to \$10 a year, and the usual laboratory deposits if they take laboratory work. If they take undergraduate work in any department, they must pay the full fees in that department. Graduates of colleges and other universities will not be classed as graduate students if they take undergraduate work.

Students in any department that withdraw before the opening of the second semester, will, upon application, have refunded to them in the early days of March, one-fourth ($\frac{1}{4}$) of the fees for the whole session; but such students must, before the close of the first semester, file with the President written application addressed to the Board of Curators for the refunding of that part of the fees. Students that enter during the second semester will pay three-fourths ($\frac{3}{4}$) of the fees for the entire session.

In all the laboratories, except the Chemical, and in certain departments of the Shop, a deposit of \$5 for a session, or any part thereof, is required. Hereafter this deposit will be required in the Laboratory of Anatomy also. This deposit, less deduction for loss arising from cost of material or from injury, is returned at the end of the laboratory course in any session. In the Chemical Laboratory the deposit is \$9. Only Teaching Fellows are exempt from making these deposits.

The charge for a diploma is \$3 and for a certificate \$2.

Laboratory deposits and rent of rooms in the Club-houses must be paid to the Proctor; all other fees must be paid at the Boone County National Bank, to the Treasurer of the University. *All fees and deposits must be paid in advance.*

Any student who does not pay promptly his dues of any sort to the University, shall be liable to suspension or expulsion.

The student who has attained the highest rank in the graduating class of any "approved school" will be permitted to enter the Academic department of the University, or the College of Agriculture and Mechanic Arts (including Engineering) without the payment of the entrance and the library and incidental fees for the first year.

Students who fail to comply with the regulation requiring class-cards in the second semester to be filled, approved and filed with the Registrar by or before Tuesday, the first day of the semester, must pay a fee equal to one-half the fees for the session, unless specially excused. Excuses will not be granted except for grave reasons.

For statement of expenses in the School of Mines and Metallurgy (at Rolla, Missouri), see Index.

Board :

Board in private families, with lodging, fuel and light, may be obtained at from \$3 to \$4.50 a week.

The four Club-houses lodge about 200 students, and furnish meals at small cost to about 400. In the large brick club-building situated on the Campus—known as the University Boarding Club—room-rent for each student is from \$20 to \$25 a year, according to location of the room. This includes room-rent, the attention of servants, heat, water, and the aid of a matron, who supervises the house-keeping. It is payable on or before the first day of September. The cost of board, room-rent, fuel, lights and washing, to those who enter a club, is about \$2 a week. Each room is furnished with a double bed-stead, a table and two chairs. The occupants are expected to furnish whatever else they deem necessary. The University Club-house is furnished with a good system of steam-heating and ventilation, and with new closets and bath-rooms of the best quality. The rooms are lighted with electric lights.

The new dormitory, which has been named the Farmers' Club, will be ready for occupancy by June 1, 1898. The plans are for a main hall and two wings, of which only the main hall will be built at present. It is of pressed brick finished in gray sandstone and terra cotta. It will be thoroughly equipped with baths and closets on each floor, and well ventilated. The rooms are arranged in suites of two bed rooms and a study, and will accommodate, without the wings, about 70 students with lodging and about 400 with meals, at small cost. The rooms are not provided with any furniture in this Club-house.

Students in the College of Agriculture and Mechanic Arts will have the preference of rooms in the two Agricultural Club-houses, provided application be made before the opening of the first semester, in September; but they will pay the same rent as other students. These two buildings accommodate 32 men. The rent of these rooms is from \$10 to \$12.50 a session for each student.

The members of the clubs have their own officers—president, commissary, secretary, censors, etc. They levy and collect assessments, buy their own provisions, and thus regulate their own expenses. The matrons supervise the preparation and serving of the food and the cleaning of the buildings.

In any club building, only two students will be allowed in one room, except by consent specially given by the Executive Board; and when three thus occupy one room, each of the three must pay full room-rent.

Students in the Short Course in Agriculture and in the Spring Course for Teachers who may rent such rooms in any of the club-houses as are vacant at the time of their entrance shall pay therefor in the proportion which the length of their course of instruction bears to the entire session.

Except by consent of the Executive Board, specially given, students that do not rent rooms in a club will not be permitted to take their meals at the club table. When consent is given the student pays to the Proctor of the University \$5 a semester. The charges made by the University do not include an initiation fee of \$4 charged by the club. Students in the Short Courses in Agriculture and Horticulture and in the Spring Course for Teachers pay for table board a permit of \$2 and an initiation fee of \$1.

On no account will table board in a club be given to any person not duly matriculated in the University, or to any person without a permit from the Proctor.

Each student renting a room in one of the club-houses, or taking out a permit to take meals, shall be required to make a deposit of \$5. This deposit will be refunded at the close of his connection with the club, provided he has paid all charges against him personally for damages to, or loss of, University property, and his proportionate part of the charges against the club for such damage or loss.

Students who rent rooms in any club or take out permits for meals, shall not have any part of the amount paid by them refunded, but such students may, with the consent of the Proctor, reread their rooms or assign their permits.

As the accommodations of the club-houses are limited, it is necessary for students who wish to engage rooms to make early application for them; they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for them must be made to the Proctor of the University, J. G. Babb.

DEGREES AND CERTIFICATES.

Degrees:

The following degrees are now conferred by the University:

In the Academic department, Bachelor of Arts (A. B.), Bachelor of Letters (B. L.), Bachelor of Science (B. S.), Master of Arts (A. M.), and Doctor of Philosophy (Ph. D.).

In the Normal department, Bachelor of Pedagogics (B. P.).

In the School of Agriculture, Bachelor of Agriculture (B. Agr.), and Master of Agriculture (M. Agr.).

In the Law department, Bachelor of Laws (LL. B.), and Master of Laws (LL. M.).

In the Medical department, Doctor of Medicine (M. D.).

In the School of Engineering, Bachelor of Science (B. S.) in Civil Engineering, in Electrical Engineering, and in Mechanical Engineering, respectively. The degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), are also given for graduate work.

The degrees of B. S. in Mining Engineering, in Civil Engineering, and in Chemistry and Metallurgy, and the graduate degrees of Civil Engineer

(C. E.), and Engineer of Mines (E. M.), are given in the School of Mines and Metallurgy, at Rolla, Missouri.

The Master's degrees and the degree of Doctor of Philosophy (Ph. D.), are conferred upon the completion of sufficient graduate work. For particulars, see announcement of the "Graduate Department."

Except that of Doctor of Laws (LL. D.), no degrees are conferred *honoris causa*.

For further information, see the respective departments.

Certificates:

A certificate in Surveying, one in Pedagogics, one in the two-years' course in Agriculture, and also one in Military Science and Tactics, are given.

Three certificates (in Assaying, Surveying, and Electricity respectively) are given at the School of Mines and Metallurgy, Rolla.

For further information, see the various departments.

COMMENCEMENT EXERCISES.

The Commencement Exercises occupy the four days ending with the first Wednesday in June of each year. For specific days, see Calendar, page iii.

PRIZES.

Curators' Scholarships:

By order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College (including Engineering) without the payment of the first year's entrance and library and incidental fees.

The student attaining the highest grade, or who shall be first in merit, in taking the degree of A. B., B. S., or B. L., in the graduating class of any of the universities or colleges composing the Missouri College Union, will be admitted to the Law or to the Medical department of the University for the first year without payment of any tuition fees. The Missouri College Union is now composed of Washington University, Westminster College, William Jewell College, Drury College, Central College, Missouri Valley College, and the University of the State of Missouri.

Free scholarships in the Academic department are offered to such students from the "Masonic Home of Missouri," St. Louis, and the "Odd Fellows Home," Liberty, as may be prepared to enter the University.

Students who hold Teaching Fellowships (see page 52) are admitted to the University without the payment of entrance and library fees, or laboratory deposits.

Stephens Medal:

Founded by the Hon. James L. Stephens, of Columbia, and annually awarded for the best oration by a member of the Senior class. The prize

consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

The Laws Astronomical Medal:

For conditions of award, see Index, under "Astronomy."

Dachsel Prize:

Ten dollars in money, by the late Charles Dachsel, engineer, of Jefferson City, Mo., is awarded for the best thesis on the Steam Engine.

McAnally Medal:

For the best English essay. See Index, under "English."

Rollins Scholarships:

See page 51.

Law Prize:

See announcement of Law Department.

The William J. Bryan Prize:

Established by the Board of Curators through a generous donation by the Hon. W. J. Bryan, of Lincoln, Nebraska. The prize consists of a medal, for the purchase of which the annual income from \$350 is available, and is awarded to the best essay on some subject pertaining to the Science of Government.

Declamation Prizes:

Particulars are given in the announcement of the work in Elocution. (See Index).

Medals Offered by the Literary Societies:

The literary societies in the University offer medals to the winners in their inter-society contests in declamation, essay, oration, etc.

SOURCES OF AID TO STUDENTS.

1. The Rollins Aid Fund:

Anthony W. Rollins, M. D., an honored citizen of Boone county, father of the Hon. James S. Rollins, dying in 1845, left by his will the sum of \$10,000 in trust for the purpose of educating such poor and indigent youths of Boone county, both male and female, as might be unable to educate themselves. Three-fourths of the annual interest on the fund, according to the directions of the donor, is to be devoted to the education of the youths of Boone county, and the remaining one-fourth is to be added to the interest-bearing principal. The fund amounts now to about \$40,000. The President of the University is required, at each annual Commencement, to invite the citizens who may be present, to subscribe for the enlargement of this fund.

The beneficiaries of this charity are annually selected by the President of the University from the indigent youths of Boone county, male and female. In compliance with the wishes of the donor, the selection is made with reference to the moral as well as the intellectual qualities of the youths inclined to avail themselves of the advantages of the fund, preference being given, in the selection of boys, to such as evince an inclination to preach the gospel.

Applications for aid from the Rollins Aid Fund must hereafter be in writing; a blank form will be furnished by the Proctor, with whom it must be filed after it has been filled. The applicant must appear in person at the opening of the first semester, September 14, as no reservation will be made. No application should be made or will be received, unless the applicant has passed the examinations for entrance and has been duly admitted to the University. Hereafter a part of the money given to each beneficiary may be paid at the opening of the first semester and a part at the opening of the second semester.

2. The James S. Rollins University Scholarships:

In 1889 the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri, for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"*First*—The College of Arts, for the degree of A. B., fifty dollars.

"*Second*—The College of Arts, for the degree of B. S., fifty dollars.

"*Third*—The College of Agriculture and Mechanic Arts, for the degree of B. Agr., fifty dollars.

"*Fourth*—The College of Law, for the degree of LL. B., fifty dollars.

"*Fifth*—The College of Medicine, for the degree of M. D., fifty dollars.

"*Sixth*—The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the *Junior class*, in each of the colleges designated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In according these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but

that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

“With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and a greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted.”

3. Cadetships:

Each Senator and Representative of the General Assembly of Missouri may appoint two cadets from his district. For further information see report of the Department of Military Science and Tactics.

4. Curators' Scholarships:

See page 49.

5. Teaching Fellowships:

Teaching Fellowships are annually established in any subject where such additional teaching force may be required. Students holding these are put down in the list of the Faculty as Teaching Fellows. They are appointed by the Board of Curators, are required to teach five or six hours a week, and receive for this service \$200. They are required to devote the rest of the time to graduate work approved by the Professor whom they assist and by the President of the University. Only those who have completed the longest undergraduate course given in the University in any subject are eligible to the fellowships in that subject, and they must be recommended to the Board of Curators by the Professor of said subject. Students holding these fellowships are not required to pay entrance and library fees, or to make laboratory deposits.

6. Club-houses:

See page 47.

7. Labor on Farm and Garden:

PHYSICAL CULTURE.

Gymnasium:

The Thirty-eighth General Assembly appropriated the sum of \$7,500 for the equipment of a gymnasium, and \$1,800 for the improvement of the athletic grounds. Rooms in the new Academic Hall have been set aside for the gymnasium proper, and fitted with baths, lockers, etc. A fine equipment has been put in. There is a separate gymnasium, thoroughly equipped, for women.

Athletic Grounds:

In addition to the gymnasium there are athletic grounds, with baseball and foot-ball fields. These are enclosed, a grand-stand has been erected, and a track constructed for bicycling and running. These, with

the tennis courts, will provide ample means of exercise for every student in the University. In recognition of the generosity of members of the Rollins family toward the Athletic Association, the field has been named by the Curators "The Rollins Athletic Field."

STUDENTS' PERIODICALS.

The students maintain and manage two periodicals. These are the *Independent* (bi-weekly), and the *Savitar* (annual).

SOCIETIES.

1. Literary:

There are connected with the University at Columbia twelve Literary Societies for students, the "Graduate Club," the "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Medical Society," the "Agricultural Society," the "Engineers' Society," the "Missouri State University Debating Club," the "New Era Debating Club," "The Forum," (a Law school debating club), "Der Deutsche Verein," and the "Biological Club." These societies hold weekly meetings for improvement in debate, declamation, oratory and composition, and form an important means of culture, especially in speaking and writing.

For societies at the School of Mines, see page 60.

2. Young Men's Christian Association:

The object of this organization, which dates its existence in the University from January 18, 1890, is the same as in other institutions of learning: namely, to represent and in every way to promote practical Christianity, particularly among the students. The work has been rich in good results.

Devotional exercises are held every Sunday afternoon. Classes hold weekly meetings for the study of the Bible, and special religious services are held from time to time.

A movement has been set on foot to erect a building to cost at least \$40,000, for the Young Men's and Young Women's Christian Associations. For this purpose, the former has already pledged the sum of \$6,500, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in all the appointments necessary for the work of the Association.

A lot immediately in front of the University Campus has been purchased for the site of this building at a cost of \$2,650, of which all but about \$800 has been paid.

The Association is at present using the old building which stood on the lot when purchased, having fitted up a reading-room and room for games for the benefit of the Association and its student friends. On the rear of the lot a tennis court has been built at a cost of \$26, which outclasses any on the Campus, and is one of the advantages offered by the Association.

At the beginning of each scholastic year a committee from the Y. M. C. A., to be recognized by their badges, meet students at the trains and freely render them valuable assistance in securing board by introducing them to friends and to officers of the University, and by various acts of kindness. A letter sent in advance to the President of the Young Men's Christian Association will receive prompt and cheerful attention.

The General Secretary, employed by the Association, has his office at the Association building, and is ever ready to render any aid to students that may be in his power.

The Association also offers, annually, to the public, particularly to the students, at actual cost, a series of literary and musical entertainments of high order and excellence.

During the last session the following lectures and concerts were thus given: Newel Dwight Hillis, "John Ruskin's Message to the Nineteenth Century;" John De Mott, "Character Building;" President J. G. Schurman, "Some Modern Developments in Religious Thought;" Leland T. Powers, "Oliver Twist;" Listemann String Quartet.

3. Young Women's Christian Association:

The Association, which is similar in its aims and methods to the foregoing, was organized April 2, 1891. Its object is the advancement of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Both of these Associations have enjoyed the hearty encouragement of all the authorities of the University.

4. Musical:

There also exist among the students Glee, Mandolin, Guitar and Banjo clubs, which form an attractive feature of University life.

5. Athletic Association:

For several years an Athletic Association has existed among the students. Under its direction and encouragement a Foot-ball Team, Tennis Teams, and a Base-ball Team are each year organized; and, in addition, athletic exhibitions (indoor and outdoor) are given. The Spring Games on the new Athletic Field will soon, we hope, become Intercollegiate throughout the State. The women play Basket-ball.

6. Alumni:

The Alumni Association is composed of graduates of the University. It holds an annual meeting on Tuesday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this Society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about university life.

The initiation fee for membership is \$2. This is the only charge imposed upon members, as the Association possesses an endowment of \$3,000, the income of which is used in defraying expenses of the annual meeting, etc. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. An application for membership, inclosing membership fee, addressed to N. T. Gentry, Secretary, Columbia, Missouri, will lead to prompt enrollment.

The officers of the Association are: Isidor Loeb, '87, Columbia, President; E. D. Phillips, '77, Kansas City, First Vice-President; Mrs. N. T. Gentry, '89, Columbia, Second Vice-President; N. T. Gentry, '84, Columbia, Secretary; C. B. Rollins, '74, Columbia, Treasurer.

The University hopes to publish, at an early date, an alphabetical list of its graduates with their addresses, professions, etc. To this end, graduates are requested to furnish the University Registrar, Irvin Switzler, with information pertaining to such compilation.

A movement for a stronger organization of the Alumni has been inaugurated. The Alumni constitute, in fact, one of the largest elements in the life of the University, and, sufficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State.

LOCAL CHAPTERS OF THE ALUMNI ASSOCIATION.

Baton Rouge, La.:

W. W. Clendenin, President.
W. R. Dodson, Secretary.

Macon City:

R. W. Barrow, President.
Dr. R. Gillaspay, Secretary.

Chillicothe:

Scott C. Miller, President.
Katherine M. Leaver, Secretary.

Marshall:

Judge James Cooney, President.
———, Secretary.

Columbia:

Dr. M. D. Lewis, President.
R. H. Emberson, Secretary.

Moberly:

Judge B. S. Head, President.
F. G. Ferris, Secretary.

Denver, Colorado:

Judge G. W. Miller, President.
J. T. Bottom, Secretary.

Richmond:

Thomas N. Lavelock, President.
F. P. Dibelbliss, Secretary.

Fort Smith, Arkansas:

J. B. Gass, President.
F. A. Youmans, Secretary.

Sedalia:

Louis Hoffman, President.
Hon. Chas. E. Yeater, Secretary.

Jefferson City:

Henry W. Ewing, President.
Frank M. Brown, Secretary.

Sweet Springs:

Hon. Robert W. Prigmore, President.
Judge V. C. Yantis, Secretary.

Kansas City:

Hon. W. S. Cowherd, President.
James Black, Secretary.

St. Louis:

Houston H. Crittenden, President.
J. E. Bishop, Secretary.

GIFTS TO THE UNIVERSITY.

To the General Library :

The most considerable gift to the University Library has been that of Dr. A. Litton, who presented the University with about 1,500 volumes, largely works on Natural Science. Other gifts are as follows:

	Vols.		Vols.
Vincent Byars.....	1	Savitar Staff.....	1
F. Y. Gladney.....	1	R. A. Alger.....	1
John Grant.....	1	D. C. Allen.....	3
A. M. Bell.....	1	Rev. Wm. Hague.....	1
Mrs. H. Carvill Lewis.....	1	Fred. C. Hicks.....	4
Mrs. Mary Barr Hardin.....	1	A. A. Lesueur.....	3
William Birney.....	1	Mr. Sadler.....	1
Mr. Crozier.....	1	Geo. B. Rea.....	1
W. L. Sheldon.....	1	Union Club.....	1
Gustav E. Stechert.....	2	Experiment Stations.....	21
Canadian Government.....	1	National Educational Association	2
Indiana Academy of Science.....	1	State Government.....	8
Indiana State Library.....	2	U. S. Government.....	159

The following periodicals have been presented to the Library:

American Economist, Boonville Democrat, Central Baptist, Christian Guide, Christian Observer, Christian Advocate (St. Louis), Columbia Herald, Columbia Statesman, Hannibal Daily Journal, Industrialist, Kansas City Mail (daily), Kansas City Live-stock Indicator, Linn County Bulletin, Marshall Democrat-News, Medical Mirror, Mexico Intelligencer, Mexico Ledger, Jefferson City Tribune, Laddonia Herald, Peirce City Democrat, Post-Dispatch (daily), Saline County Progress, Southeast Missourian, Salisbury Democrat, Sturgeon (Missouri) Leader, School and Fireside, Plattsburg Leader, Presbyterian, St. Joseph Gazette (daily), St. Joseph Herald (daily), Western College Magazine, Westliche Post.

To the Geological Department:

State Geologist of Missouri, specimens of minerals.....	30
State Geologist of Missouri, specimens of crystals	125
State Geologist of Missouri, pamphlets	7
State Geologist of Missouri, plaster model of coal pocket.....	1

State Geologist of Missouri, Geological map sheets.....	25
Geological Survey of Canada, volume with maps.....	1
Geological Survey of Canada, pamphlet.....	1
Geological Survey of Mexico, pamphlet.....	1
U. S. Geological Survey, specimens of rocks.....	150
U. S. Geological Survey, folios of the Geological Atlas of U. S.....	5
Geological Survey of New Jersey, volume with maps.....	1
Geological Survey of Minnesota, volumes.....	2
Geological Survey of Iowa, volumes.....	6
Prof. J. M. Safford, Geological map of Tennessee.....	1

To the Lows Observatory:

Dr. A. Wolfer, Zurich, Switzerland.....	1 pamphlet
Dr. A. Wolfer, Zurich, Switzerland.....	1 book
Lick Observatory, Mt. Hamilton, Cal.....	15 lunar photographs
Dr. G. Schiaparelli, Milan, Italy.....	1 pamphlet
Prof. F. H. Bigelow, Washington, D. C.....	1 pamphlet
Dr. B. A. Gould, Cambridge, Mass.....	1 book
Dr. L. Weinek, Prague, Poland.....	1 picture of the moon
Smithsonian Institution, Washington, D. C.....	5 books
U. S. Coast & Geod. Survey, " "	2 books
U. S. Weather Bureau, " "	1 monthly periodical
Prof. A. J. Waters, Columbia, Mo.....	1 book

To the Chemical Laboratory:

C. B. Brown, Leadville, Col. Auriferous and Argentiferous Ores from Colorado.
Prof. O. L. Jackson, Harvard University. Reprints of original chemical papers from the Harvard Chemical Laboratory.

To the Department of Romance Languages:

Friends at Boston.....	10 pamphlets, 50 volumes
Friends at New York.....	4 pamphlets, 19 volumes
Dr. P. Passy, Paris.....	1 volume
Dr. Minckwitz, Karlsruhe.....	1 volume
Prof. Grandgent, Cambridge, Mass.....	3 pamphlets, 1 volume
Judge J. D. Lawson	11 volumes
E. E. Brandon	4 volumes
Anonymous friends.....	2 pamphlets, 12 volumes

To the Law Department:

State of Missouri, Missouri Appeals Reports.....	5 volumes
State of Missouri, Superior Court Reports.....	6 volumes
State of Missouri, Session Acts of 1897.....	1 volume
American Bar Association, Report of Proceedings, 1896.....	1 volume

Form of Gift by Will:

For the guidance of those contemplating a bequest to the University, the following brief form is suggested, and information given. The information states what is needful to make a valid will. The State will accept and be responsible for all money given to the University, paying thereon 5 per cent. interest:

I give, devise and bequeath to the Curators of the University of the State of Missouri ——— for the purpose of ———.

[In Missouri, the requisites to a valid will are as follows: 1. The testator if a male must be 21 years old to make a will of real estate; or 18 to make a will of personal estate. If a female at the age of 18, the testator is competent as to both realty and personalty. 2. The will must be in writing. 3. It must be signed by the testator or by some one at his direction in his presence. 4. It must be witnessed by two persons. 5. The witnesses must sign their names to the will in the presence of the testator.]

Any person may give, grant or devise money or property to the University. The statute provides that the money or the proceeds of the property shall be paid into the State Treasury to the credit of the Seminary Fund. Thereupon a State certificate of indebtedness will be issued, with interest at 5 per cent. per annum, payable semi-annually. The interest so paid will be applied to the uses of the University in accordance with the law and in accordance with the wishes of the donor as expressed by him in making the gift, grant or devise. (See sections 8818, 8819, 8820 and 8821, Revised Statutes of Missouri, 1889).

B. THE SCHOOL OF MINES AND METALLURGY, AT ROLLA.

Buildings and Equipment:

Main Building.—The buildings of the School of Mines are situated in the most elevated part of the town of Rolla. They are substantial brick structures, well ventilated and lighted. The Main building and the Mining laboratory are heated by steam. The Main building contains the assembly-room, the library, lecture rooms for the Professors of Engineering, Mathematics, Physics, and for Academic work, the Physical laboratory, offices of Executive Committee and Director, etc. For the work in Engineering there is ample provision of field instruments, and a beginning has been made in the acquisition of testing apparatus.

Physical Laboratory.—The Physical laboratory has recently received several thousand dollars' worth of apparatus, and its equipment is being augmented from time to time. It is especially strong on the side of electricity, and comprises two dynamos, with which a small electric lighting plant is maintained.

Chemical Laboratory.—The Chemical laboratory is housed in a separate building, admirably adapted to its occupancy. This contains a lecture-

room, qualitative laboratory, quantitative laboratory, Professor's laboratory, assay laboratory, weighing-room, evaporating-room, preparation-room, supply-room, and basement. Facilities for heat, light and ventilation, and for carrying off foul or noxious gases, are excellent. Gas and water are supplied to each table. The assay laboratory, which is on the first floor, is amply provided with the proper furnaces, ore-crusher, pulverizing plate, balances, etc., and throughout the whole building the arrangement and equipment are such as to leave little to be desired.

Mining and Metallurgical Laboratory.—The Mining and Metallurgical laboratory, for which the 37th Assembly made an appropriation of \$25,000, is now completed. In addition to provision for instruction, both by lectures and by laboratory methods, in Mineralogy and in Geology, there is a special laboratory fitted with full-sized working machinery and the needed furnaces for practical illustration of the processes of ore-dressing and of metallurgy.

In the second story is a drawing-room of about 600 square feet of floor space, lighted from the top by sky-lights.

Library.—The library contains about 8,700 volumes. It is well provided with scientific and technical works designed to afford the student an opportunity of supplementing his class-work by collateral reading. There is also a respectable collection of works of general literature. On its reading-tables the leading scientific periodicals and others of general or literary interest are accessible. The library is open daily from 8 a. m. to 4 p. m.

Club-house.—The students' club-house or dormitory is a handsome three-story building, erected in 1890, and contains room enough for twenty-five or thirty lodgers. The dining-room and kitchen can supply board for sixty. No charge is made for room-rent, but each occupant of a room is required to make a deposit of \$5 to pay for any damages for which he may be responsible—the unconsumed portion of this fund being returned to him at the end of the session. The cost of board, including lights and heat, is at present \$13 a month. Any one who may wish to engage a room should make an early application, accompanying it with the five-dollar deposit.

Expenses:

An entrance fee of \$10 and a library fee of \$2 each semester are the only general charges. Students in the Chemical laboratory pay for material consumed and apparatus broken, to provide for which emergencies a deposit of \$10 is made at the beginning of the year, this sum being increased to \$15 for those taking a "special" or "assay" course. The unused portion of this deposit is returned at the end of the year.

Board, fuel, lights, and washing, can be had for from \$12 to \$16 a month. The necessary expenses range from \$140 to \$200 a year.

Athletics :

Through the liberality of the Curators an athletic field has been enclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students.

Students' Societies :

A society composed of both students and professors meets fortnightly to discuss topics of contemporary interest, scientific, literary and historical. The advanced students in the Chemical laboratory conduct a "Journal Club."

Examinations :

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

Monthly Reports :

Regular monthly reports are sent to the parents or guardians of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

For fuller information, the special catalogue issued by the School will be sent upon application to the Director, Prof. George E. Ladd, Rolla, Mo.

DEPARTMENTS OF THE UNIVERSITY.

The University comprises the following departments:

I—GRADUATE DEPARTMENT.

II—ACADEMIC DEPARTMENT.

III—NORMAL DEPARTMENT.

IV—DEPARTMENT OF LAW.

V—DEPARTMENT OF MEDICINE.

VI—DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

VII—COLLEGE OF AGRICULTURE AND MECHANIC ARTS, embracing

A. *School of Agriculture;*

B. *Experiment Station;*

C. *School of Mechanic Arts;*

D. *School of Engineering.*

VIII—SCHOOL OF MINES AND METALLURGY.

[These departments II to VIII are established and made co-ordinate by the statutes of Missouri.]

I. Graduate Department.

I. ACADEMIC.

Admission :

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for.

Teaching Fellowships :

Teaching Fellowships are annually established where such additional teaching force is required. Holders of these fellowships are required to teach five or six hours a week, and receive therefor \$200; and they are exempt from the payment of all fees and deposits. For further details, see page 52.

During the year 1897-8, fellowships were held in German, French, Biology, and Mathematics.

Graduate Club:

A club has been organized by the graduate students for the purpose of furthering their social and scholastic interests in the University and of bringing themselves into touch with graduate student life elsewhere. This club has joined the Federation of Graduate Clubs of the leading American Universities, and the courses here offered are announced in the handbook published by the Federation.

Degrees:

1. *The Master's Degree.*—Application for the Master's Degree in Arts, Letters or Science will be considered on the basis of one year's graduate study in the University. This year's study is understood to mean for teaching fellows at least eight (8) hours a week, for other students at least ten (10) hours a week throughout the scholastic year, or the full equivalent of such study. All courses may be taken from one general subject; at least half must be.

The majority of the courses must be from those offered for graduate students. No course open to undergraduates below the Junior year shall be counted for this degree.

A creditable thesis evincing capacity for original research and power of independent thought, in the line of the student's previous work, shall be submitted on or before May 1 of the given year.

The subject of the thesis and the courses chosen shall be laid before the Committee on Graduate Degrees on or before Nov. 1 of each year.

At the close of the scholastic year the University Council may, on the report of this Committee, recommend to the Board of Curators for this degree such candidates as have satisfactorily fulfilled these conditions.

2. *The Doctor's Degree.*—The candidate will be expected to spend at least three years, or if he have a Master's Degree, at least two years, in graduate study under University direction; but with the consent of the Faculty, one of these years may in either case be spent *in absentia*.

The candidate must have a Bachelor's degree in Arts, Letters, Science, or Philosophy, from some reputable University or College, and must attain in graduate study at this University a high proficiency in one branch of learning, and a respectable proficiency in at least one other. He must submit a dissertation embodying the results of original investigation, and must pass examinations in his major and minor subjects.

Candidates who have satisfactorily met these conditions may be recommended for the Doctor's degree in the manner prescribed above for candidates for the Master's degree.

•COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Updegraff:

Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

BIOLOGY (ZOOLOGY).

Professor Ayers, Mr. Jackson:

7. Neurology. A course in the study of vertebrate central nervous system and the terminal sense organs. *Three times a week.* Lectures and laboratory.

10. Cytology. A special study of animal cells with reference to their structure, environment and activities. *Three times a week.*

20. Investigations in Vertebrate Morphology. For 1898-99 topics will be assigned within the group of cartilaginous fishes. Hours to be arranged with the instructor.

CHEMISTRY.

Professor Brown:

1. History of Chemistry and Chemical Philosophy.
2. Quantative Analysis (advanced).
3. Organic Chemistry (advanced).
4. Physical Chemistry.

CLASSICAL ARCHÆOLOGY.

Professor Pickard:

1. Topography and Monuments of Athens. *Two hours a week.* Jahn's "Pausaniæ Descriptio Arcis Athenarum," and Schubart's text of Pausanias will be studied and interpreted in the light of most recent excavations and publications. The disputed points of Athenian topography will be discussed, and the attempt will be made, with the aid of plans and photographs, to obtain as clear ideas as possible of both ancient and modern Athens.

2. Archæological Seminary. *Two hours a week.* A study of the description, explanation, and interpretation of works of Greek Art will be made. Both sculpture and vase paintings will be discussed, and important points in the history of Greek Art and Greek artists will be considered.

ENGLISH.

Assistant Professor Penn:

1. Gothic and Old Saxon. *Three hours a week.* An introduction to Germanic philology, with special reference to English. The first semester is given to Gothic, the second to Old Saxon. Grammatical forms, phonology,

*Other courses of study offered among the Academic Studies (pages 76 ff.) are accepted as graduate in rank. For details, see announcements there.

and morphology of these languages are studied; the accompanying lectures discuss the characteristics of the Germanic dialects—Vowel correspondences, the first and second shiftings of consonants, the ablaut series, and the general laws of language development.

Professor Allen:

2. *Beowulf*. *Three hours a week*. This course includes: Translation of the poem, with criticism of the text, proposed readings, etc.; study of the grammar of Anglo-Saxon in its relation to precedent and subsequent stages of the language; Anglo-Saxon versification, etc. Questions of mythology, geography, early Germanic life, the genesis of the poem, etc., are assigned for special study.

GEOLOGY.

Assistant Professor Marbut:

1. Petrography.—Lectures and laboratory work. *Three times a week with additional hours for conferences*. This is a course in rock histology. The laboratory work will consist of the preparation and study of thin sections of rocks with the aid of the microscope.

2. Geomorphology. Special study of land form—Lectures, library, laboratory and field work. *Three times a week*.

GERMANIC LANGUAGES.

Professor Hoffman:

1. Middle High German is offered in the first semester. Grammar; reading from Wolfram von Eschenbach: "Gahmuret und Herzeloide," "Parzivals Jugend und Eintritt in's Leben"—translation into good modern High German, noting changes in construction, phraseology, and meaning of words; with lectures on the literature of the period. *Three hours a week*.

2. German Literature of the Eighteenth and Nineteenth Centuries. This course continues through the first and second semesters. *Three hours a week*.

3. A course in Old High German is offered in the second semester: Braune's Grammatik and Lesebuch; reading various fragments, and a portion from Tatian, Otfried, Notker and Williram's Lied; philological study in connection with it. *Three hours a week*.

GREEK.

Professor Manly:

Seminary for advanced study. Minute study of one play of Euripides with private readings in Aeschylus and Sophocles.

Students desiring to take this work should give previous notice, so that the necessary books may be had for them in time.

HISTORY AND POLITICAL SCIENCE.

Assistant Professor Loeb:

Advanced Study in American History. *Two hours a week*.

POLITICAL ECONOMY.

Professor Hicks:

Seminarium in Economics and Finance. *Two hours a week.*

LATIN.

Professor Jones:

1. **History of the Latin Language.** *Twice a week, both semesters.* This course embraces a historical study of the sounds, inflections and syntax of Latin. It is taught wholly by lectures, but requires much collateral reading.

2. **The Latin Seminary.** The Latin Seminary is primarily intended for those students who expect to engage in teaching. It is composed of the Professor of Latin and such graduate students as are prepared to do the work. The work consists in the critical study of some author with reports, reviews and interpretations of select passages by the class. In 1898-9 Nepos will be studied. Three meetings a week will be held.

Assistant Professor Burnam:

1. **Latin Paleography.** *Twice a week throughout the year.* This course includes an account of books, their makers and materials in antiquity and the Middle Ages, and abundant practice in reading facsimiles of manuscripts.

MATHEMATICS.

†**Professor Tindall; Acting Professor Defoe; Acting Assistant Professor Riggs:**

1. **Differential Equations.** The text used will be Johnson's Treatise on Differential Equations, with frequent reference to the admirable work of Forsyth. The treatment will embrace Ordinary Differential Equations of the First and Second Orders, Linear Equations with Constant and then with Variable Coefficients, Solutions in Series, Hypergeometric Series; the Solution of Riccati's, of Bessel's and of Legendre's Equations.

2. **Modern Higher Algebra.** The text used will be Cours D'Algebre Superieure by Serret, with Salmon's Higher Algebra for reference. The subjects treated will be General Properties of Algebraic Equations, beginning with the treatment of the Complex Variable; Elimination, Symmetric Functions of the Roots, Resultants and Discriminants, Linear Transformation.

3. **Higher Plane Curves.** The text used will be Salmon's Geometrie Analytique, with frequent reference to the great work of Clebsch. The subjects treated will be Homogeneous Co-ordinates, General Properties of Plane Curves, Envelopes, Curves of the Third Order, Curves of the Fourth Order, Unicursal Curves.

4. **Theory of Functions.** This work will consist to a great extent of a course of lectures founded upon Klein's Functionentheorie, supplemented

†Absent for session of 1897-8.

by work in Picard's *Traite d'Analyse*. The subjects will be a detailed treatment of the Complex Variable with its geometrical representation, Cauchy's Theorems, Singular Points of Functions, Surfaces of Riemann, study of Algebraic Functions and their Integrals. He has also paid much attention to the study of the Theory of the Potential. His associated work has been in Higher Plane Curves, using chiefly Clebsch; and in Higher Algebra, using Salmon and Serret.

5. The Theory of the Potential. The texts used will be Pierce's *Potential Function* and Duhem's *Mathematical Treatment of Electricite et Magnetisme*. The subjects treated will be Attraction, Theorem of Green, Lemmas of Gauss, Properties of the Potential, Surface Integrals, Electrical Distribution and the Solutions of the Problem of Dirichlet.

PHILOSOPHY.

Professor Thilly:

Modern Criticism. A study of the development of the critical problem in modern philosophy from the side of empiricism. Especial attention will be given to Locke's *Essay Concerning Human Understanding*, Berkeley's *Principles of Human Knowledge*, Hume's *Treatise on Human Nature*, and Kant's *Critique of Pure Reason*. This course is open only to such students as have completed courses in Psychology, Logic, Ethics, and the History of Philosophy, and possess a good reading knowledge of Latin, French, and German. *Three times a week for two semesters.*

PHYSICS.

Professor Lipscomb:

Laboratory. Advanced Measurements and Special Investigations. Open only to those who have had Undergraduate Courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work. *Three to five times a week.* See announcement of Academic Department, under Physics.

ROMANCE LANGUAGES.

Professor Weeks:

1. Old French. Constan's *Chrestomathie*, with lectures. *M. F., at 10:30.* This course is open to Graduates properly qualified, and to any Senior who has made a specialty of Romance Languages to the extent of having completed with high credit Undergraduate Courses 1, 2, 3 and 4 (see Academic Department, "Romance Languages"). The epic poem, *Aliscans*, will be read, with close attention to the elements that enter into the poem, the object being to present to the student a practical illustration of text criticism.

2. Phonetics. A General Introduction to Philology. *Second semester, W. F., at 4.* This course is one of general interest to students of Philology. The work consists of two parts: historical and practical. The practical work includes an effort to get at the production of speech-sounds from the physiological stand-point. Such works as Grandgent's *English and German*

Sounds (Ginn & Co.) are used. Numerous tracings showing the action of the organs of speech are discussed.

II. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

SCHOOL OF AGRICULTURE.

For the degree of M. Agr., graduates of the College with the degree B. Agr. are required to take the Two Years' graduate course described in the announcement of this School. See Index, "College of Agriculture." The details of this course are arranged to suit the previous training of the candidates.

SCHOOL OF ENGINEERING.

Graduate work in Civil, Electrical, and Mechanical Engineering is offered at Columbia to those who have finished the undergraduate courses in these subjects with the degree of Bachelor of Science. Students that entering under these conditions have completed a year of graduate work and passed satisfactory examinations thereon, and presented a thesis of real merit, will receive, according to the course in which they have studied, the degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), or Mechanical Engineer (M. E.)

See announcement of this School.

III. LAW.

One year of advanced work leading to the degree of LL.M.

The course is open to graduates of the Law department and of other law schools who have completed an equivalent course of study.

The object of the course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures, recitations and independent investigation on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence.

The student is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students such instruction.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations.

See announcement of the Law department.

II. Academic Department.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President, and Professor of Ancient and Mediæval History.

†WILLOUGHBY CORDELL TINDALL, A. M., M. S.,
Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,
Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSOOMB, A. M.,
Professor of Physics.

WILLIAM GWATHMEY MANLY, A. M.,
Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. O. E.,
Professor of Astronomy, Assistant Professor of Mathematics, and Director of the Observatory.

JOHN MILLER BURNAM, Ph. D.,
Assistant Professor of Latin Language and Literature.

JOHN WALDO CONNAWAY, M. D. O., M. D.,
Professor of Physiology (Human and Comparative).

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History and Political Economy, and Dean of the Department.

JOHN PICKARD, A. M., Ph. D.,
Professor of Classical Archæology, Assistant Professor of Greek, and Curator of the Museum of Classical Archæology.

FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.

†Absent for session of 1897-8.

LUTHER MARION DEFOE, A. B.,
Acting Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,
Professor of Elocution.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Assistant Professor (in charge) of Geology and Mineralogy, and Acting Curator of the Geological Museum.

NORMAN COLMAN RIGGS, M. S.,
Acting Assistant Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

CHARLES THOM, A. B., A. M.,
Instructor in Botany.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

INEZ RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

HUGH ALLISON SMITH, B. L.,
Teaching Fellow in Romance Languages.

ROYALL HILL SWITZLER,
Teaching Fellow in Mathematics.

CLARENCE MARTIN JACKSON,
Teaching Fellow in Biology.

ACADEMIC COURSES.

In the Academic department there are five courses of study, one leading to the degree of Bachelor of Arts (A. B.), one to the degree of Bachelor of Letters (B. L.), and three to the degree of Bachelor of Science (B. S.). In the A. B. course, prominence is given to Classics and Philosophy; in the B. L. course, to Modern Languages (including English), History, and Political Economy; and in the B. S. courses, to Mathematics and the Sciences. On reaching the Junior year (Sophomore year in B. S. courses), the candidate for a degree in any course chooses, in addition to the prescribed work, such work as he may prefer.

Taking as the unit one hour a week for one semester, the electives in the A. B. course amount to 38 hours, in the B. L. course to 38 hours, and in the B. S. courses to 62 hours.

The student may apply his electives to any Academic elective course for which he is prepared, or to any regular Academic study not required in the course that he is pursuing, or to any of the following courses offered in other Departments:

From the Normal Department: Pedagogy, for not more than three hours a week for two semesters.

From the School of Agriculture: Entomology, for not more than three hours a week for two semesters.

From the Medical Department: Anatomy or Physiology from the First Year, of both, or Bacteriology from the Second Year, for not more than six hours a week for two semesters.

From the School of Engineering: Thermodynamics, for not more than two hours a week for one semester; Descriptive Geometry, Electrical Measurements, each for not more than four hours a week for one semester; Applied Mechanics, for not more than four hours a week for two semesters; Astronomy, for not more than five hours a week for one semester; and Mathematical Theory of Stresses, for not more than three hours a week for one semester.

The maximum time, however, given to courses in other Departments must not exceed the equivalent of twelve hours for one semester.

In the Junior or the Senior year, furthermore, Academic students may take Elocution three hours a week for two semesters, and receive a credit toward the Academic degree of one hour's work for each semester.

The student may give all his electives to one study, or divide the time as he may deem proper among the eligible studies.

When the student has elected a subject that he has not studied before, he must pursue it for at least two semesters unless the subject is completed in less time. Electives are open only to Juniors, Seniors, Sopho-

mores in the B. S. courses, and Graduates. Juniors and Seniors who have Freshman or Sophomore work to make up must, in making out their cards, give such work precedence over elective work. A student who is behind his class in one or two subjects, or has been conditioned or failed to pass in any subject, may make up in the summer school, work not exceeding, in any one summer, the equivalent of twelve (12) hours for one semester of lecture-room or laboratory work (see Appendix.)

Students may not change from one course to another in a session without permission of the Faculty.

SCHEME OF STUDIES

A. B.	B. L.
<p><i>Freshman, First Semester.</i></p> <p>8:30. Comp. & Rhet., T. Th. S..... 3</p> <p>9:30. Latin, T. W. Th. F. S..... 5</p> <p>10:30. Greek, M. T. Th. S..... 4</p> <p>† Science 3</p> <p>11:30. Plane Trig. & Sol. Geom., T. Th. S..... 3</p> <p><i>Freshman, Second Semester.</i></p> <p>8:30. Comp. & Rhet., T. Th. S..... 3</p> <p>9:30. Latin, T. W. Th. F. S..... 5</p> <p>10:30. Greek, M. T. Th. S..... 4</p> <p>† Science 3</p> <p>11:30. Spher. Trig. & Anal. Geom., T. Th. S..... 3</p>	<p><i>Freshman, First Semester.</i></p> <p>8:30. Comp. & Rhet., W. F..... 2</p> <p>8:30. German or French, T. Th. S. 3</p> <p>9:30. Latin, T. W. Th. F..... 4</p> <p>or</p> <p>10:30. Greek, M. T. Th. S..... 4</p> <p>† Science..... 3</p> <p>10:30. Gen. History, T. Th. S..... 3</p> <p>11:30. Plane Trig. & Sol. Geom., T. Th. S..... 3</p> <p><i>Freshman, Second Semester.</i></p> <p>8:30. Comp. & Rhet., W. F..... 2</p> <p>8:30. German or French, T. Th. S. 3</p> <p>9:30. Latin, T. W. Th. F..... 4</p> <p>or</p> <p>10:30. Greek, M. T. Th. S..... 4</p> <p>† Science..... 3</p> <p>10:30. Gen. History, T. Th. S..... 3</p> <p>11:30. Spher. Trig. & Anal. Geom., T. Th. S..... 3</p>
<p><i>Sophomore, First Semester.</i></p> <p>8:30. Anal. Geom. or †Science, T. Th. S..... 3</p> <p>9:30. Greek, T. W. Th. F. S..... 5</p> <p>10:30. Ger. or French, M. W. F..... 3</p> <p>10:30. Eng. Lit., T. Th. S..... 3</p> <p>11:30. Latin, T. Th. F. S..... 4</p> <p><i>Sophomore, Second Semester.</i></p> <p>8:30. German or French or Physiology, M. W. F..... 3</p> <p>9:30. Greek, M. T. W. Th. F. S..... 6</p> <p>10:30. Eng. Lit., T. Th. S..... 3</p> <p>11:30. Latin, M. T. W. Th. F..... 5</p>	<p><i>Sophomore, First Semester.</i></p> <p>8:30. English History, T. Th..... 2</p> <p>8:30. Anal. Geom. or †Science, T. Th. S..... 3</p> <p>9:30. German or French, M. W. F. 3</p> <p>10:30. Eng. Lit., T. Th. S..... 3</p> <p>11:30. Latin or Greek, T. Th. F. S.. 4</p> <p>3:00. Theory of Economics and Finance, M. W. F..... 3</p> <p><i>Sophomore, Second Semester.</i></p> <p>8:30. American Hist., T. Th. F. S. 4</p> <p>9:30. German or French, T. Th. S. 3</p> <p>10:30. Eng. Lit., T. Th. S..... 3</p> <p>11:30. Latin or Greek, M. T. W. Th. F 5</p> <p>3:00. Theory of Economics and Finance, M. W. F..... 3</p>
<p><i>Junior, First Semester.</i></p> <p>8:30. Greek, T. Th. S..... 3</p> <p>9:30. Psychology, M. W. F..... 3</p> <p>10:30. German, M. W. F..... 3</p> <p>10:30. French, T. Th. S..... 3</p> <p>Elective..... 4</p> <p><i>Junior, Second Semester.</i></p> <p>8:30. Greek, T. Th. S..... 3</p> <p>9:30. Logic, M. W. F..... 3</p> <p>10:30. German, M. W. F..... 3</p> <p>10:30. French, T. Th. S..... 3</p> <p>Elective..... 4</p>	<p><i>Junior, First Semester.</i></p> <p>9:30. Psychology, M. W. F..... 3</p> <p>10:30. French or German, T. Th. S. 3</p> <p>11:30. Economic History, M. W. F. 3</p> <p>11:30. Eng. Lang., T. Th. S..... 3</p> <p>Elective..... 4</p> <p><i>Junior, Second Semester.</i></p> <p>9:30. Logic, M. W. F..... 3</p> <p>10:30. French or German, T. Th. S. 3</p> <p>11:30. Economic Hist., M. W. F.... 3</p> <p>11:30. Eng. Lang., T. Th. S..... 3</p> <p>Elective..... 4</p>
<p><i>Senior, First Semester.</i></p> <p>Elective..... 15</p> <p><i>Senior, Second Semester.</i></p> <p>Elective..... 15</p>	<p><i>Senior, First Semester.</i></p> <p>Elective..... 15</p> <p><i>Senior, Second Semester.</i></p> <p>Elective..... 15</p>

SCHEME OF STUDIES—Continued.

B. S.

1. MATHEMATICAL—PHYSICAL			2. LATIN—SCIENCE			3. NATURAL HISTORY		
<i>Freshman, First Semester.</i>			<i>Freshman, First Semester.</i>			<i>Freshman, First Semester.</i>		
8:30.	Comp & Rhet, T Th S	3	8:30.	Comp. & Rhet, T Th S	3	8:30.	Comp. & Rhet, T, Th S	3
9:30.	German or French, M W F	3	9:30.	German or French, M W F	3	9:30.	Comp. & Rhet, T, Th S	3
10:30.	Algebra, M W F	3	10:30.	General Biology of Animals and Plants, T	1	10:30.	General Biology of Animals and Plants, T	1
11:30.	Physics, T S	2	10:30.	Latin or Greek, M W F	3	11:30.	Chemistry, M or W	1
12:30.	Chemistry, M or W	1	11:30.	Chemistry, M or W	3	11:30.	Plane Trig & Sol Geom., T, Th S	3
1:30.	Physical Laboratory, Th	1	11:30.	Comp., T Th S	3	11:30.	Biological Laboratory, Th S	3
1:30.	Chemical Laboratory	2	1:30.	Comp., T Th S	2	1:30.	Chemical Laboratory	2
<i>Freshman, Second Semester.</i>			<i>Freshman, Second Semester.</i>			<i>Freshman, Second Semester.</i>		
8:30.	Comp & Rhet, T Th S	3	8:30.	Comp & Rhet, T Th S	3	8:30.	Comp. & Rhet, T Th S	3
9:30.	German or French, M W F	3	9:30.	German or French, M W F	3	9:30.	Comp. & Rhet, T Th S	3
10:30.	Algebra, M W F	3	10:30.	General Biology of Animals and Plants, T	1	10:30.	General Biology of Animals and Plants, T	1
11:30.	Physics, T S	2	10:30.	Latin or Greek, M W F	3	11:30.	Chemistry, M or W	1
12:30.	Chemistry, M or W	1	11:30.	Chemistry, M or W	3	11:30.	Plane Trig & Sol Geom., T, Th S	3
1:30.	Spher Trig & Anal Geom., T	3	11:30.	Spher Trig & Anal Geom., T	3	11:30.	Biological Laboratory, Th S	3
1:30.	Physical Laboratory, Th	1	1:30.	Biological Laboratory, Th S	2	1:30.	Chemical Laboratory	2
1:30.	Chemical Laboratory	2	1:30.	Chemical Laboratory	2	1:30.	Chemical Laboratory	2
<i>Sophomore, First Semester.</i>			<i>Sophomore, First Semester.</i>			<i>Sophomore, First Semester.</i>		
8:30.	Anal Geom, T Th S	3	8:30.	Latin or Greek, T Th S	3	8:30.	Anatomy of Vertebrates, T, Th S	3
9:30.	German or French, M W F	3	9:30.	German or French, M W F	3	9:30.	Histology of Vertebrates, M W F	3
10:30.	Physics, M F	2	10:30.	Physiographic Geology, M W F	3	10:30.	German or French, M W F	3
11:30.	General Astronomy, M W F	3	10:30.	Physics, T S	2	10:30.	Physics, T S	2
1:30.	Physical Laboratory, W	1	1:30.	Physical Laboratory, Th	1	1:30.	Physical Laboratory, Th	1
1:30.	Elective	6	1:30.	Elective	6	1:30.	Elective	6

Sophomore, Second Semester.			Sophomore, Second Semester.			Sophomore, Second Semester.		
8:30	Calculus, T. Th. S.	3	9:30	Latin or Greek, T. Th. S.	3	9:30	Anatomy of Vertebrates, T. Th. S.	3
9:30	German or French, T. Th. S.	3	9:30	Th. S.	3	9:30	Animal Physiology, M. W. F.	3
10:30	Physics, W.	1	9:30	Th. S.	3	9:30	German or French, M. W. F.	3
11:30	Gen. Astronomy, M. W. F.	3	10:30	Th. S.	3	10:30	Physics, T. S.	2
1:30	Physical Laboratory, M. F.	2	1:30	Th. S.	1	1:30	F. Th.	1
	Elective	6			6			6
Junior, First Semester.			Junior, First Semester.			Junior, First Semester.		
9:30	Psychology, M. W. F.	3	9:30	Psychology, M. W. F.	3	9:30	Psychology, M. W. F.	3
10:30	Physiographic Geology, M. W. F.	3	11:30	Gen. Astronomy, M. W. F.	3	11:30	Gen. Astronomy, M. W. F.	3
	Elective	10		Elective	10		Elective	10
Junior, Second Semester.			Junior, Second Semester.			Junior, Second Semester.		
9:30	Logic, M. W. F.	3	9:30	Logic, M. W. F.	3	9:30	Logic, M. W. F.	3
10:30	Physiographic Geology, M. W. F.	3	11:30	Gen. Astronomy, M. W. F.	3	11:30	Gen. Astronomy, M. W. F.	3
	Elective	10		Elective	10		Elective	10
Senior, First Semester.			Senior, First Semester.			Senior, First Semester.		
Elective		15	Elective		15	Elective		15
Senior, Second Semester.			Senior, Second Semester.			Senior, Second Semester.		
Elective		15	Elective		15	Elective		15

¹ Notes on the Scheme of Studies —1. Students in the A. B. and B. L. courses may elect in their Freshman year, three hours a week of

year, th

year in

do not

5

6.

7

such as

gy. Mineralogy, Biology.

semester of their Sophomore

throughout the Sophomore

at his pleasure, provided he

exercises each week

subjects, unless the course is

stry, etc.

ACADEMIC STUDIES.

English.

Professor ALLEN; Assistant Professors PENN and BELDEN.

- 1A. English Composition and Rhetoric. Detailed study and practice (1) in the structure of the Paragraph, and (2) in the Kinds of Composition. Lectures. Text-book, exercises, and themes. Scott & Denney's Paragraph-Writing, and A. S. Hill's Principles of Rhetoric. Sections I and II, *T. Th.*, at 8:30; Sections III and IV, *W. F.*, at 8:30; Section V, *M. W.*, at 11:30. Assistant Professors PENN and BELDEN.

(Freshman.)

- B. Class-room studies of masterpieces of English Literature (with collateral readings) to illustrate the different kinds of literary composition. Section I, *S.*, at 8:30; Section II, *F.*, at 11:30. Assistant Professors PENN and BELDEN.

(A.B., B. S., and Engineering Freshman.)

2. English Literature. *First semester*, Chaucer to Milton; *Second*, Restoration to the present. Lectures. Parallel readings, and reports; essays on literary and historical subjects. *T. Th. S.*, at 10:30. Professor ALLEN and Assistant Professor BELDEN.

(Sophomore.)

3. English Literature. Nineteenth Century. *First semester*, 1789-1830; *Second*, 1830-1890. Lectures. Readings, class-room study of texts, and occasional essays. *T. Th. S.*, at 10:30. Assistant Professor PENN.

(Sophomore.)

Open also as a Junior Elective.

4. English Literature. Eighteenth Century; from the Restoration to the French Revolution. *First semester*, Dryden and Pope; *Second*, Swift, and the Novelists. Lectures. Readings, and reports. *W. F.*, at 3. Assistant Professor BELDEN.

(Junior Elective.)

- 5a. History of the English Language. Lectures and text-book. *First semester*, *T. Th. S.*, at 11:30. Professor ALLEN.

(Junior.)

- 5b. Study of Modern Prose Style, based upon master-pieces of representative authors. Essays, and reports. *Second semester*, *T. Th. S.*, at 11:30. Professor ALLEN.

(Junior.)

6. English Literature. Shakspeare. Eight selected plays; class-room reading and interpretation; detailed study of style. *T. Th. S.*, at 3. Assistant Professor PENN.

(Junior Elective.)

14. English Literature. The English Drama. *First semester*: Chief Plays of Shakspeare, in approximate chronological order. A study of the development of Shakspeare's art and genius. *Second semester*: The English Drama (exclusive of Shakspeare), from its beginnings to the Restoration (1250—1660). Lectures. Selected plays, and reports; occasional essays. *T. Th. S., at 3.* Assistant Professor PENN.

(Senior Elective.)

Courses 6 and 14 are to be given in alternate years. Course 6 will be given in 1898-99.

16. English Literature. Tennyson and Browning. Readings, class-room study and interpretation of texts, and occasional papers by members of the class. Open only to those that have had English 3 or an equivalent. *W. F., at 10:30.* Assistant Professor PENN.

(Senior Elective.)

- 15a. American Literature. Lectures. Selected readings, and reports. *Second semester, T. Th. S. at 3.* Assistant Professor BELDEN.

(Junior Elective.)

7. Anglo-Saxon. Prose and Poetry. *W. F., at 11:30.* Prof. ALLEN.

(Senior Elective.)

8. Studies in Anglo-Saxon, based on Beowulf and the Wuelker-Grein Bibliothek. *T. Th. S., at 3.* Professor ALLEN. (Graduate Elective.)

Course 7 or equivalent is required for admission to Course 8.

- 9b. Higher Composition, and Principles of Versification. *Second semester, W. F., at 2.* Assistant Professor BELDEN. (Senior Elective.)

- 10b. Middle English. *Second semester, T. Th., at 8:30.* Professor ALLEN.

(Senior Elective.)

11. Gothic. Introduction to Germanic Philology, with special reference to English. Wulfila. Lectures. *M. W. F. at 3.* Assistant Professor PENN. (Graduate Elective.)

The second half of the year may be given to Old Saxon (Heliand.)

- 12a. The French Element in English. (Knowledge of Latin and French necessary.) *First semester, W. F., at 9:30.* Professor ALLEN.

(Senior Elective.)

- 12b. Principles of English Etymology. *Second semester, W. F., at 9:30.* Professor ALLEN. (Senior Elective.)

- 13a. Teachers' Course. *First semester.* Professor ALLEN.

Required for B. L., courses 1 (except B.), 2 (or 3), 5a and 5b; for A. B., courses 1 (A and B), and 2 (or 3); for B. S. and Engineering, course 1 (A and B).

Of the elective work, course 6 is open to Seniors also; courses 14 and 10b are open to Juniors, and courses 8, 11 are primarily for Graduates.

A special medal, known as the "McAnally Medal," is offered for the best essay, thesis, or poem by members of the Senior class, competing under certain rules laid down by the founder of the prize. Subject for 1899: "Edgar Allan Poe."

Latin.

Professor JONES; Assistant Professor BURNAM.

The following courses are offered:

1. Cæsar and Cicero. *M. W. F., at 10:30.* Selections from the Gallic War and from the Civil War. Four orations of Cicero. Grammar and Composition. This course is required of students in the Latin-Science course and may be taken as an elective by those students in the other science courses, who presented for entrance two years of Latin, instead of two years of German or two years of French. It is not open to students in the A. B. or B. L. course. Assistant Professor BURNAM. (Freshman, Latin-Science.)
Text-books: Kelsey's Cæsar and Cicero; Perrin's Cæsar; Daniell's New Latin Composition; Allen and Greenough's Latin Grammar.
2. Sallust and Vergil, with sight reading. *T. W. Th. F., at 9:30.* Professor JONES, Assistant Professor BURNAM. (Freshman, B. L.)
Text-books: Herberman's Catiline; Greenough and Kittredge's Vergil; Latin Composition; Allen and Greenough's Latin Grammar.
3. Sallust and Vergil, with sight reading. *T. W. Th. F. S., at 9:30.* Professor JONES, Assistant Professor BURNAM. (Freshman, A. B.)
Text-books: Herberman's Catiline; Greenough and Kittredge's Vergil; Latin Composition; Allen and Greenough's Latin Grammar; Guerber's Myths of Greece and Rome.
4. Cicero and Vergil. Cicero, de Senectute, Vergil's Æneid. *T. Th. S., at 8:30.* Assistant Professor BURNAM. (Sophomore, Latin-Science.)
Text-books: Bennett's Cicero; Greenough and Kittredge's Vergil; Latin Composition; Allen and Greenough's Latin Grammar.
5. Horace and Livy. *First semester, T. Th. F. S., at 11:30; Second semester, M. T. W. Th. F., at 11:30.* Professor JONES, Assistant Professor BURNAM. (Sophomore, A. B. and B. L.)
Text-books: Smith and Greenough's Horace; Lord's Livy; Grammar and Composition.
6. (a) Cicero and Pliny, selected Letters. (b) Juvenal and Martial. *T. Th. S., at 10:30.* Professor JONES. (Junior Elective.)
7. Sight-reading. *T. Th., at 9:30.* Professor JONES. (Junior and Senior Elective.)
8. Terence and Plautus. *M. W. F., at 10:30.* Professor JONES. (Senior Elective.)
- 9a. Course for expectant Latin teachers. *First semester, M. W., at 8:30.* Professor JONES.
10. Critical study of a selected author. *T. Th. S., at 10:30.* Professor JONES. (Graduate Elective.)

11. History of the Latin Language. Sounds, inflections, syntax. *W. F.*, at 8:30. Professor JONES. (Graduate Elective.)
12. Latin Paleography. Books, the makers and materials, in Antiquity and the Middle Ages; abundant practice in reading facsimiles of manuscripts. *M. W.*, at 9:30. Assistant Professor BURNAM. (Graduate Elective.)

Courses 1 and 4 are required for the B. S. degree in the Latin-Science Course; courses 2 and 5 are required for the B. L. degree, and courses 3 and 5 for the A. B. degree. All other courses are elective. The Roman method of pronunciation only is permitted.

Greek.

Professor MANLY; Assistant Professor PICKARD.

1. Xenophon's Anabasis. *M. T. Th. S.*, at 10:30. (Freshman.)
- 2a. Homer's Odyssey, I—VI., *First semester, T. W. Th. F. S.*, at 9:30. (Sophomore.)
- 3b. Xenophon's Memorabilia, I—II, Plato's Apology and Crito. *Second semester, W. Th. F. S.*, at 9:30. (Sophomore.)
- 4b. History of Greece. *Second semester, M. T.*, at 9:30. (Sophomore.)
5. Greek Tragedy. *T. Th. S.*, at 8:30. (Junior.)
- 6a. Greek Theatre. *First semester, one hour a week.* (Elective.)
7. Life of the Ancient Greeks. Assigned readings and reports. Lectures illustrated by maps, charts, photographs and stereopticon views. *W. F.*, at 2. (Elective.)
- 8a. New Testament Greek. *First semester, T. Th. S.*, at 3. (Elective.)
- 9b. Teacher's Course. The work will be specially adapted to students expecting to teach. This course counts toward the Academic and Normal degree. *Second semester, two hours a week.* (Elective.)
10. Greek for students of Science and other students who wish to understand scientific terms derived from Greek. *Three hours a week.*
11. Thucydides. *Two hours a week.* (Elective.)
12. Homer's Iliad and Odyssey. Rapid reading and papers on Homeric Antiquities. *Two hours a week.* (Elective.)
13. Seminary for advanced study. *Two hours a week.* (Elective.)

Courses 1, 2a, 3b, 4b and 5 are required for the A. B. degree.

Classical Archæology.

Professor PICKARD.

The following courses are offered:

1. History of Greek Art. An introductory study of Assyrian and of Egyptian Art, followed by a special study of the development of Greek Architecture and Sculpture from the VII. Century B. C., to the I. Century A. D. *T. Th. S.*, at 3.

2. Explanation of the masterpieces in the Museum of Casts. *One hour a week.*

Open to all students of the University who desire to become acquainted with the finest works of art in the museum.

- 3a. "Homeric Art" or Art of Primitive Greece. Lectures based on the latest excavations and publications. *First semester, one hour a week.*
 4b. Introductory Study of Greek Vases and Vase Paintings; based on Rayet, and Collignon's "La Ceramique Grecque." *Second semester, one hour a week.*

5. Etruscan and Graeco-Roman Art. *Two hours a week.*

Study of Etruscan Art is based on Martha, "L'Art Etrusque."

Study of Graeco-Roman Art is carried down to Byzantine times.

6. Topography and Monuments of Olympia based on a careful study of Pausanias. *Two hours a week.*

7. Roman Life. *One semester, two hours a week.* A special study of the extant remains, particularly in Rome and Pompeii. No knowledge of Latin required.

8. Archæological Seminary. Interpretation of monuments and discussion of disputed points in the history of Greek art and Greek artists.

9. History of Renaissance Painting. *First semester, Painting of the Netherlands and of Germany; Second semester, Italian Painting, M. W. F., at 3.*

10. History of Modern Painting, *two hours a week.*

11. History of Architecture. *Three hours a week.*

All courses are elective. Course 6 alone requires a knowledge of Greek. Courses 6 and 8 are primarily Graduate electives.

Museum of Classical Archæology:

An excellent beginning has been made in equipping a laboratory for the study of Classical Archæology. For this purpose the third floor of the west wing of Academic Hall, a room 110x36 ft., is fitted up. It is now supplied with models of temples, illustrating the three orders of Greek Architecture, and with fifty plaster casts of the most famous specimens of Greek and Roman Art. These are arranged chronologically, and with them are hung one hundred and fifty framed photographs of other works of classic art. Besides these, the Museum possesses about a thousand photographs, and a fine collection of lantern slides..

Romance Languages.

Professor WEEKS; Mr. SMITH.

FRENCH.

1. Elementary course. French Prose and Composition. Grandgent's French Grammar, Rollin's Reader. Section I, *T. Th. S., at 8:30;* Section II, *M. W. F., at 8:30.* Professor WEEKS and Mr. SMITH.

2. Modern Fiction and Plays. Composition, Sight-reading. *M. W. F.*, at 9:30. Professor WEEKS.

This course is meant for the second year's study in French. Much ground will be covered, and especial attention paid to pronunciation. Several of the books read are here mentioned: Some one of Erckmann-Chatrian's better stories; Daudet's *La Belle Nivernaise* (Flammarion edition); de Musset's *Pierre et Camille*; Me. Greville's *Doria*; de Vigny's *Le Cachet Rouge*; Sandeau's *Mademoiselle de la Seigliere*; Scribe's *La Bataille de Dames*, Lamartine's *Jeanne d'Arc*.

3. A course parallel to the second year's work under (2) is given, intended especially for training in conversation and composition. Besides some of the texts mentioned in (2) many short stories are read with reports and discussions in French. *M. W. F.*, at 10:30. Mr. SMITH.
4. General View of French Literature. Rapid Reading. *T. Th. S.*, at 9:30. Professor WEEKS and Mr. SMITH. (Junior Elective.)

This course is meant for the third year's study. A great deal of ground is covered; much pronouncing is done, very little translation. The course is conducted entirely in French. Students do outside reading, and hand in written work in French. The first semester is devoted to the 17th and 18th centuries. One or more plays of the great classical dramatists are read, together with several orations of Bossuet. In the 18th century two of Voltaire's plays and one of Beaumarchais' are read. The second semester is devoted to the 19th century. A story and a play by Hugo are read, and among other things the following works: de Vigny's *Cinqmars*; Merimee's *Colomba*; About's *Le Roi des Montagnes*; de Bornier's *La Fille de Roland*; de Banville's *Gringoire*; Labiche's *Moi* (Allyn & Bacon's edition); Coppee's *On Rend l'Argent*, and his *Le Pater* (Holt & Co.); a volume of de Musset's Poems and two of his Proverbs.

5. The Classic Period of French Literature. *Th. Th.*, at 10:30. Mr. SMITH. (Senior Elective.)

During the first semester Pascal's *Lettres Provinciales* will be read, with lectures on Jansenism. An ability to understand spoken French is a requisite for this course. During the remainder of the year, some subject desired by the students may be taken up. Last year the beginnings of French lyric poetry were read in this way.

6. Old French. Constan's *Chrestomathie*, with lectures in French. The class will read the greater part of *Aliscans*, edition of Guessard. *M. F.*, at 10:30. Professor WEEKS. (Graduate Elective.)

This course is meant for Graduates. Occasionally a Senior who has taken with high credit the preceding work and who is making a specialty of Romance Languages, is allowed to elect this course, which can be pursued advantageously for two successive years.

ITALIAN.

1. Beginning Course. *T. Th. S., at 11:30.* Professor WEEKS.

(Junior Elective.)

This course for the present can be given only in alternate years. No composition work is done. Grandgent's Italian Grammar is used. As soon as possible students begin to pronounce aloud without translating.

SPANISH.

1. Beginning Course. *T. Th. S., at 10:30.* Professor WEEKS.

(Junior Elective.)

This course is parallel to the one in Italian, and the same methods are employed. The Grammar used is Knapp's.

PHONETICS.

- 1b. General Introduction to Philology. *Second semester, W. F., at 4.* Professor WEEKS. (Graduate Elective.)

An effort is made in this course to study the phenomena of speech sounds from a physiological standpoint.

Germanic Languages.

Professor HOFFMAN; Miss RIGGS.

The following courses are offered:

1. German. Section I, *T. Th. S., at 8:30*; Section II, *M. W. F., at 10:30.*
Professor HOFFMAN and Miss RIGGS. (Freshman.)
Text-books: Thomas's Practical Grammar, Van Daell's Reader, Storm's Immensee, Gerstaecker's "Germelshausen," Schiller's "Der Neffe als Onkel."
2. German. Section I, *M. W. F., at 9:30*; Section II, *T. Th. S., at 8:30.*
Professor HOFFMAN and Miss RIGGS. (Sophomore.)
Text-books: Doktor Wespe by Benedix; Heine's Harzreise, Schiller's Wilhelm Tell, Harris's Prose Composition, Syntax.
3. Life and Works of Schiller. Composition. *T. Th. S., at 10:30.* Professor HOFFMAN. (Junior.)
4. Goethe and Lessing. General view of the literature of their time. Essays. *T. Th. S., at 11:30.* Professor HOFFMAN. (Graduate Elective.)
- 5a. Middle High German. *First semester, M. W. F., at 11:30.* Professor HOFFMAN. (Graduate Elective.)
Paul's Mittelhochdeutsche Grammatik; Wolfram von Eschenbach. Lectures on the Literature of the M. H. German Period.

- 5b. Old High German. *Second semester, M. W. F., at 3.* Professor HOFFMAN. (Graduate Elective.)

Braune's Althochdeutsche Grammatik and Althochdeutsches Lesebuch.

6. German Literature of the XVIII and XIX Centuries. *T. Th. S., at 3.* Professor HOFFMAN. (Graduate Elective.)

Courses 1, 2, 3 are required studies. Course 4 is open also to Seniors.

Course 1 is a Freshman study for B. L. and B. S. students, but Sophomore for A. B. students. Course 2 is a Sophomore study for B. L. and B. S. students, but Junior for A. B. students.

History.

Professor HICKS; Assistant Professor LOEB.

The following courses are offered:

1. General History. A course in the General History of Europe presupposing such elementary knowledge as may be obtained from such work as Myers' General History. Sec. I. *T. Th. S., at 10:30*; Sec. II, *at 11:30.* (Freshman.)
2. English and American History. *First semester.* The Political History of England. Sec. I, *T. Th., at 8:30*; Sec. II, *at 2.* Special attention will be given to the growth of political institutions. *Second semester.* American History. Sec. I. *T. Th. F. S., at 8:30*; Sec. II, *at 2.* A general survey of American History from the beginning of Colonization to the Present. (Sophomore.)
3. Theory of Politics and Comparative Constitutional Law. *M. W. F., at 3. First semester.* Theory of Politics. An historical and critical study of the theories of the nature and origin of the state and an analysis of rights and sovereignty. *Second semester.* Comparative Constitutional Law. A comparative study of the constitutional law of the principal states of Europe and America. (Elective.)
4. Seminar in American History. *Two hours a week.* (Elective.)
 Required: For B. L., courses 1, 2.
 Elective: All courses are elective.
 Undergraduate and Graduate: Course 3.
 Graduate: Course 4.

Political Economy.

Professor HICKS.

The following courses are offered:

1. Theory of Economics and of Finance. A course in the fundamental principles of economics and of finance. The subjects are first covered by lectures, after which a comparative study is made of the views of representative authors. *M. W. F., at 3.* (Sophomore.)

2. **Economic History.** A study of the industrial development of England, the United States and Missouri, with special reference to the economic problems of society. *M. W. F., at 11:30.* (Junior.)
 3. **Economic Problems.** A critical study of some of the leading economic problems: Socialism, Problems of Labor, Money, Transportation and the Tariff. *T. Th. S., at 3.* (Elective.)
 4. **Modern Financial Systems.** An historical study of the general development of financial systems, including a detailed investigation of the history of public finance in the United States and Missouri, followed by a comparative study of the revenue systems of the leading nations and of some of the American commonwealths. *T. Th. S., at 11:30.* (Elective.)
 5. **Seminar.** An opportunity is here given for the advanced study of questions of economics and finance. (Elective.)
- Required: For B. L., courses 1, 2.
 Elective: All courses are elective.
 Undergraduate and Graduate: Courses 3, 4.
 Graduate: Course 5.

Philosophy.

Professor THILLY.

The following courses are offered:

1. **Psychology and Logic.** Sections I and II, *M. W. F., at 8:30 and 9:30;* Section III, *T. Th. S., at 9:30.* (Junior.)
 Required for A. B. and B. S. degrees. Text-books: James' Psychology, Briefer Course, and Hibben's Inductive Logic.
2. **Child Psychology.** *M. W. F., at 10:30.* (Elective.)
 Course 2 must be preceded by course 1. Text-books: Baldwin's Mental Development in the Child and the Race; Preyer's Die Seele des Kindes; Sully's Studies of Childhood; Tracy's Psychology of Childhood.
3. **Ethics.** Lectures and recitations. *T. Th. S., at 2.* Text-book: Paulsen's System of Ethics. (Elective.)
4. **History of Philosophy.** Lectures and recitations. *T. Th. S., at 10:30.* (Elective.)
 Text-book: Weber's History of Philosophy.
5. **Metaphysics.** Lectures and recitations. *T. Th. S., at 11:30.* Text-book: Paulsen's Introduction to Philosophy. (Elective.)
6. **Modern Criticism.** A Study of the Development of the Critical Problem in Modern Times. *T. Th. S., at 8:30.* (Elective.)
 Course 6 must be preceded by courses 1 and 4. Text-books: Locke's Essay Concerning Human Understanding, Berkeley's Treatise on the Principles of Human Knowledge, Hume's Treatise on Human Nature, and Kant's Criticism of Pure Reason.

Mathematics.

†Professor TINDALL; Acting Professor DEFOE; Assistant Professor UPDEGRAFF, and Acting Assistant Professor RIGGS.

- 1a. Trigonometry and Solid Geometry. *First semester, T. Th. S., at 11:30.*
Acting Professor DEFOE and Acting Assistant Professor RIGGS.
(Freshman.)

Texts: Crawley's Trigonometry, Phillips and Fisher's Geometry.

- 1b. Analytic Geometry. *Second semester, T. Th. S., at 11:30.* Acting Professor DEFOE, and Acting Assistant Professor RIGGS. (Freshman.)
Text: Smith's Conic Sections.

2. Advanced Algebra. *M. W. F., at 9:30.* Acting Professor DEFOE.
Text: Hall and Knight's Higher Algebra. (Freshman.)

3. Analytic Geometry and Calculus. *T. Th. S., at 8:30.* Acting Professor DEFOE and Acting Assistant Professor RIGGS. (Sophomore.)
Texts: Smith's Conic Sections, Byerly's Differential Calculus.

4. Theory of Equations and Determinants. *M. W. F., at 9:30.* Acting Professor DEFOE. (Junior Elective.)
Texts: Burnside and Panton's Theory of Equations, and Gordon's Determinants.

5. Analytic Mechanics. *M. W. F., at 9:30.* Acting Professor DEFOE. (Junior Elective.)
Text: Loney's Statics and Dynamics.

6. Integral Calculus. *T. Th. S., at 9:30.* Acting Assistant Professor RIGGS. (Junior Elective.)
Text: Byerly's Integral Calculus.

- *7a. Solid Analytic Geometry. *First semester, M. W. F., at 8:30.* Acting Professor DEFOE. (Senior Elective.)
Text: Chas. Smith's Solid Geometry.

- *7b. Plane Analytic Geometry. *Second semester, M. W. F., at 8:30.* Professor TINDALL. (Senior Elective.)
Text: Smith's or Salmon's Co-ordinate Geometry.

8. Differential Equations. *T. Th. S., at 10:30.* Acting Assistant Professor RIGGS. (Graduate Elective.)
Text: Murray's Differential Equations.

9. Higher Plane Curves. *M. W. F., at 10:30.* Acting Professor DEFOE. (Graduate Elective.)
Text: Salmon's Geometrie Analytique and Clebsch's Geometrie.

- *10. Modern Higher Algebra. *T. Th. S., at 8:30.* Professor TINDALL. (Graduate Elective.)
Text: Serret's Cours d'Algebre Superieure.

†Absent for session of 1897-1898.

*Not given in 1897-1898.

- *11. Theory of Functions. *T Th. S., at 11:30.* Professor TINDALL.

(Graduate Elective.)

Texts: Klein's Functionentheorie or Picard's Traite d'Analyse.

- *12. Theory of the Potential Function. *M. W. F., at 10:30.* Professor TINDALL.

(Graduate Elective.)

Texts: Peirce's Newtonian Potential Function and Duhem's Electricite et Magnetisme.

13. Teacher's Course. *W., at 10:30.* Acting Professor DEFOE.

(Senior Elective.)

Required: For B. L. and A. B., and B. S. Nos. 2 and 3, 1a, 1b; for B. S. No. 1, 1a, 1b, 2, and 3; for the degree in Engineering, 1a, 1b, 2, 3, and 6.

Courses 7a, 7b, 8 and 12 are especially recommended to students of Engineering.

Of courses 4 and 5, and of courses 11 and 12, only one each will be given.

*Not given in 1897-1898.

Astronomy.

Professor UPDEGRAFF.

1. Popular Astronomy. Lectures, recitations, and occasional night observations. Treatment non-mathematical. *T. Th. S., at 11:30.*

(Elective.)

Text: Newcomb's Popular Astronomy, Library Edition.

2. General Astronomy. Lectures, recitations, and occasional night observations. *M. W. F., at 11:30.*

(Sophomore and Junior.)

Trigonometry required. Text: Young's General Astronomy.

- 3a. Practical Astronomy (For Seniors in Civil Engineering). Recitations, and practical work in the Observatory. *First semester, five hours a week.*

Text: Doolittle's Practical Astronomy.

- 3b. Geodesy and Least Squares (For Seniors in Civil Engineering). Recitations, and practical work in the field. *Second semester, four hours a week.*

Text: Gore's Geodesy.

4. Spherical and Practical Astronomy. Problems of Spherical Astronomy. Theory and practical use of instruments. *Three hours a week,*

(Junior Elective.)

Calculus required. Text: Chauvenet's Spherical and Practical Astronomy.

5. Spherical and Practical Astronomy. Continuation of Course 4. *Three hours a week.*

(Senior Elective.)

6. **Theoretical Astronomy.** Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

(Graduate Elective.)

A thorough course in Calculus and Analytic Geometry is required.

Text: Watson's Theoretical Astronomy.

Required: For B. S., Course 2; for B. S. in C. E., Courses 3a and 3b.

The Laws Astronomical Medal:

An engraved medal, called the "S. S. Laws Astronomical Medal," is offered annually to that member of the graduating class who stands highest in Astronomy, and has at the same time attained a high average of general scholarship. An original thesis written on some astronomical subject, and showing capacity for scientific investigation, is required.

The Laws Observatory:

The Observatory, a building 84 feet long from east to west, and from 14 to 30 feet wide, stands on an elevated portion of the campus. The equipment consists of a 7½-inch equatorial refracting telescope by Merz and Söhne, of Munich, a 2 1-10-inch transit instrument by Brunner, of Paris, an altitude and azimuth instrument of 2½ inches in aperture, sidereal and mean-time clocks, sidereal break-circuit chronometer, chronograph, sextant, micrometer and a complete outfit of smaller instruments.

Clocks and instruments are mounted on piers of solid masonry, isolated from the floors and walls of the buildings, and are provided with the usual electrical connections. The dome of the telescope is 18 feet in diameter. A cone of 14 feet in diameter, which revolves on balls, shelters the altitude and azimuth instrument. The transit-room, which has three slits in the walls and roof for observation, contains the transit instruments, chronograph, and sidereal clock.

There is in the Observatory a valuable collection of astronomical books and pamphlets, and several of the best astronomical periodicals are regularly received.

In the year 1880, Dr. S. S. Laws, then President of the University, contributed largely from his private funds toward the improvement of the Observatory building and instruments. In recognition of his generosity the Board of Curators named the Observatory in his honor.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

1. **Elementary Physical Measurements.** This course is designed for Agricultural students. It enable them to become acquainted with the more important and simple methods used in the qualitative and quantitative study of physical phenomena. Lecture or recitation, *W., at 11:30.* Laboratory, *M. S., at 1:30.* Mr. GRIFFITH.

(First year Agricultural.)

2. **Elements of Physics.** A course designed especially for Medical students. Lectures and recitations, *M. F.*, at 11:30. Laboratory, *T. Th.*, at 1:30. Mr. GRIFFITH. (First year Medical.)
3. **General Physics.** Mechanics, Sound and Light. *First semester*, Experimental lectures and recitations, *T. S.*, at 10:30; Laboratory, *Th.*, at 1:30. *Second semester*, Lecture, *Th.*, at 1:30; Laboratory, *T. S.*, at 1:30. Professor LIPSCOMB. (Freshman and Sophomore.)
Required in all B. S. courses, elective in A. B. and B. L. Text: Carhart's University Physics, Part I.
4. **Heat, Electricity, and Magnetism.** *First semester*: Lectures, *M. F.*, at 10:30; Laboratory, *W.*, at 1:30. *Second semester*: Lecture, *W.*, at 10:30; Laboratory, *M. F.*, at 1:30. Professor LIPSCOMB. (Sophomore.)
Required in the Mathematical-Physical course, and open to all Academic students who have taken course 3, or its equivalent. Texts: Carhart's University Physics, Part II; Laboratory, Nichols (Vol. 1), and Gee & Stewart.
5. **A course in General Physics**, designed especially for Engineering students. Lectures and Laboratory, *three times a week the first semester, and five times a week the second semester.* Professor LIPSCOMB. (Sophomore.)
Required of all Engineering students, elective in Academic courses. Text: Anthony and Brachett.
- 6a. **Special Laboratory work in Mechanics, Heat, and Light.** *First semester*, *M. W. F.*, at 1:30. Professor LIPSCOMB or Mr. GRIFFITH. (Third year Agriculture.)
Elective in Academic courses.
- 7a. **The Practical Application of Electricity in Medicine and Surgery.** *First semester*, *T. Th. S.*, at 9:30. Professor LIPSCOMB. (Third year Medical.)
Elective in all Academic courses. Text: Liebig & Rohe.
- 8a. **The Theory of Heat.** *First semester*, *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Elective.)
Required of Seniors in E. E. and M. E. Text, Maxwell.
- 8b. **The Theory of Light.** *Second semester*, *T. Th. S.*, at 10:30. Professor LIPSCOMB. (Elective.)
The basis of the work in this course is Preston's Theory of Light.
- 9a. **Experimental Work in Heat, Light and Electricity.** *First semester*, *T. Th. S.*, at 1:30. Professor LIPSCOMB. (Elective.)
- 9b. **Mathematical Theory of Electricity and Magnetism.** *Second semester*, *T. Th. S.* (Elective.)
Courses 8a, 8b, 9a and 9b are open only to those students who have taken 3 and 4 or their equivalent.

10. Laboratory. Advanced measurements and special investigations. *Two to five times a week.* (Graduate and Senior Elective.)

• Open only to those who have had courses 3, 4, 8a, 8b, 9a and 9b, or an equivalent amount of work.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Instructor, MR. MOORE.

The following courses are offered:

1. General Inorganic Chemistry. Experimental lectures, laboratory work, and recitations.
 - A. Lectures, *M. W.*, at 11:30. Laboratory work and recitations, *twice a week at 1:30.* Both semesters, *four hours a week.*
 - B. Lectures, *M. W.*, at 11:30. Laboratory work and recitations, *once a week at 1:30.* Both semesters, *three hours a week.*
 - C. Lectures, *M. or W.*, at 11:30. Laboratory work and recitations, *twice a week at 1:30.* Both semesters, *three hours a week.*
- 2b. Metallurgy. Lectures and recitations. *Second semester, three hours a week.*
3. Organic Chemistry. Lectures, laboratory work, and recitations. *Both semesters, three hours a week.*
- 4a. Qualitative Chemical Analysis. Laboratory work, with lectures. *First semester, three hours a week.*
- 4b. Quantitative Chemical Analysis. Laboratory work. *Second semester, three hours a week.*
5. Advanced Laboratory Work. Inorganic and Organic. *Daily.*
- 6a. or 6b. Organic Chemistry (Introductory Course). Lectures, laboratory work, and recitations. *First or second semester, three hours a week.*
- 7a. General Chemistry (for Medical Students). *First semester, T. W. F. S., at 1:30.*
- 8b. Organic Chemistry (for Medical Students). Lectures and recitations. *Second semester, three hours a week.*
- 9a. Toxicology. Lectures and recitations. *First semester, Th. S., at 11:30.*
- 10b. Chemical Theory. Lectures and recitations. *Second semester, three hours a week.*

For this course 1 and 3 or 6a should be taken.

- 11a. History of Chemistry. Lectures and recitations. *First semester, three hours a week.*

For this course 1 and 3 or 6a should be taken.

- 12b. Physical Chemistry. Lectures, laboratory work, and recitations. *Second semester, three hours a week.*

Required for B. S., 1C; for B. S. in S. E., 1A; for B. S. in C. E., M. E., and E. E., 1A and 2b; for B. Agr., 1A; for M. D., 1A, 7a, 8b, and 9a.

Elective: All courses except 7a, 8b, and 9a.

Elective for A. B. and B. L., Freshman year, 1B.

Where days and hours are not stated these will be arranged to suit the class.

Geology and Mineralogy.

Emeritus Professor BROADHEAD; Assistant Professor MARBUT.

1. **Physiographic Geology.** Lectures, Written Exercises, Laboratory and Field Work. *M. W. F., at 10:30, with an occasional hour for conference.* Assistant Professor MARBUT. (B. S. Required.)
Course 1 is required in Freshman year of B. S. No. 8, Sophomore of B. S. No. 2, and in Junior of B. S. No. 1, and open as an elective in other courses.
2. **Historical Geology and Paleontology.** Laboratory and Field Work, with Lectures and Recitations. *Three times a week.* Assistant Professor MARBUT. (Elective.)
This course can be elected by students in the Natural History course in the Sophomore year.
- 3a. **Meteorology:** Recitations, Lectures, and Laboratory Work. *First semester, three times a week.* Assistant Professor MARBUT. (General Elective.)
- 3b. **Mineralogy and Crystallography.** Recitations and Laboratory Work. *One semester, three times a week.* Assistant Professor MARBUT. (General Elective.)
- 4b. **Elementary Geology.** Lectures and Recitations on the General Principles of Geology. *Second semester, three times a week.* Assistant Professor MARBUT. (General Elective.)
- 5b. **Economic Geology.** Lectures, Recitations and Laboratory Work. *Second semester, T. Th. S., at 9:30.* Assistant Professor MARBUT. (Engineering and Agriculture.)
6. **Petrography.** Lectures and Laboratory Work. *Three times a week, with additional hours for conferences.* Assistant Professor MARBUT. (Senior and Graduate Elective.)
This course is open only to those who have had courses in Mineralogy and Crystallography and in General Geology.
7. **Geomorphology.** Special Study of Land Form. Lectures, Library, Laboratory and Field Work. *Three times a week.* Assistant Professor MARBUT. (Senior and Graduate Elective.)
This course is open to those students only who have had courses in Physiographic and General Geology.

Biology.

Professor AYERS, Mr. THOM, Mr. JACKSON.

A. GENERAL BIOLOGY AND ZOOLOGY.

The following courses are designed and arranged for three classes of students: (a) those who desire to become acquainted with the fundamental principles and aims of the science, (b) those who are or intend pursuing the course in Agriculture, Medicine or Sanitary Science, and (c) those who wish either to teach Biology or to penetrate deeper into the phenomena of life and the resultant organization.

2. **General Biology.** This course is intended to give a general survey of the whole field of biological science, and to acquaint the student, by personal observation, with a series of types of animals and plants, studied in the laboratory. The object in view is not to burden the student with systems, facts or technicalities of the text-books, but to direct attention to such subjects as best serve the needs of a liberal education, and at the same time give some preparation for the professional courses in Agriculture, Medicine, Sanitary Science, and the specialist in Zoology or Botany. Since Biology stands for a group of sciences, each with distinct aims, problems and methods, the main purpose of the course will be to furnish the basis for a comprehensive understanding of this body of science, and to make clear its subject matter, its principal subdivisions, its scope, its relations to other sciences and its import for the daily life of the race and the individual. Lecture *T. at 10:30*; Laboratory *Th. S. at 1:30*. Professor AYERS, Mr. THOM and Mr. JACKSON. (Freshman.)

Texts: Hertwig, Principles of Zoology; Wilson, The Cell in Development and Heredity; Parker, Elementary Biology; Parker and Haswell, Zoology.

4. **Vertebrate Morphology.** A detailed study of the anatomy of a typical series of vertebrate animals. It is designed for those who wish to make a thorough study of Physiology, for the Medical student, and for the specialist in Zoology. *Three times a week.*

(Sophomore and Undergraduate Elective.)

5. **Histology.** The microscopic anatomy and cytology of vertebrates. *Three times a week.* (Undergraduate Elective.)

Text-books: Schaefer, Essentials of Histology; Piersol, Normal Histology; Hertwig, The Cell and Tissues; Wilson, The Cell in Development and Heredity.

6. **Embryology of Vertebrates.** *Three times a week.* Text book, Marshall, Vertebrate Embryology. (Undergraduate and Graduate Elective.)

7. **Neurology and Terminal Sense Organs.** *Three times a week.* Edinger, Vorlesungen ueber den Nervencentralorgan.
(Undergraduate and Graduate Elective.)
8. **Theoretical Biology.** *Three times a week.* Lectures and collateral reading in the works of Lamarck, Darwin, Huxley, Romanes, Poulton, Weissman, Whitman and others.
(Undergraduate and Graduate Elective.)
20. **Investigators' Course.** For the training of students in zoological-anatomical inquiries. Each student is required to select some unsolved problem of suitable character and to add to the sum of human knowledge by the solution of it by his own powers of observation and thought.

B. BOTANY.**Mr. THOM.**

1. **General Botany.** (See course in General Biology.) (Freshman.)
2. **Structural Botany and Comparative Morphology.** *Three times a week.*
(Elective.)
3. **Plant Physiology.** Lectures and Laboratory. *Three times a week.*
(Elective.)
4. **Ecology.** Lectures and Field Work. *Three times a week.* (Elective.)

Animal Physiology.**Professor CONNAWAY.**

The following courses are offered:

- 1b. **Animal Physiology (Minor course).** One lecture and two laboratory periods a week. *Second semester, T. Th. S., at 8:30.*
Required in Sanitary Engineering, Agriculture and B.S. course No. 3. Elective in A. B., B. S. Nos. 1 and 2, and Normal courses. Students in the Natural History course (B. S. No. 3) who intend to pursue the advanced work in Physiology may apply the three hours of required work in Sophomore year to course 2a. (See below.) Text: Martin's The Human Body (Advanced Text); Laboratory Manual: Foster and Langley's Practical Physiology.
- 2b. **Advanced course.** *Second semester.*
Lectures, *M. W. F., at 8:30*, and three laboratory periods a week, on the special physiology of: digestion, absorption, blood, circulation, respiration, secretion, excretion and the contractile tissues.

2a. Continuation of the above course. *First semester.*

Lectures, *M. W. F.*, at 8:30, and three laboratory periods a week, on the special physiology of: metabolism, nutrition, dietetics, the spinal cord and brain, the special senses and reproduction. Open to all who have completed courses in physics, chemistry, anatomy, and histology equivalent to the required work in B. S. course No. 8. Text: Foster's Physiology. Collateral reading: other advanced text-books and Journal of Physiology. Laboratory Manual: Stirling's Practical Physiology. Reference Manuals: Sanderson, Schenck, Langendorff, Halliburton, Salkowski (in library).

3. Teachers' Course. *One hour a week. Time to be arranged.*

The purpose of this course is to furnish instruction in methods of teaching Physiology, and to give the Normal students an opportunity of applying their knowledge. Each student is required to make special preparation upon some assigned topic, both as to the subject matter, and the methods of presenting it. The laboratory demonstrations necessary to the proper presentation of the topic must be prepared by the student. Course 1 or 2 must precede or accompany this course.

4. Investigation.

(a) The verification of the results of some recent physiological research. (Senior Elective.)

(b) Original work along some selected line.

(Graduate Elective.)

Open to students who have completed course 2, and show an aptitude for this work. *Time to be arranged with the instructor.*

Elocution.

Professor SCOTT.

The work of the first semester embraces: Breathing for conscious voice support; phonetics applied to enunciation, stress, inflection, quality and quantity; phrasing; melody, intonation and cadence; movement and rhythm; foundation theory and practice in bearing and gesture; analysis of short prose and poetic passages, for the establishment of voice correlation with thought and feeling.

Text-book: G. L. Raymond's Orator's Manual.

The work of the second semester comprises studies from Shakespeare and other poets; studies in the reading of didactic, descriptive, narrative and impassioned prose; studies in forensic oratory, with constant review of principles.

Juniors and Seniors in the Academic Department may take Elocution as an elective three hours a week for one year, and receive a credit therefor

of one hour a week for the two semesters. This subject may be elected by students in other departments, but does not count toward a degree.

A course of 3 hours for one semester will be given, open to expectant teachers of reading. It is elective to Normal students, and counts as 1 hour toward an Academic degree.

For 1899 three prizes in cash—one of \$25, one of \$15, and one of \$10—are offered for public competition in declamation. The contest will be held in the second semester, and is open to students of Elocution only.

SCHOOL OF JOURNALISM.

Art and History of Newspaper Making. History of Printing. Evolution of the Newspaper. Typography, Presswork, Engraving.

Newspaper Making. Business management; cost and revenue; advertising; editorials, reporting, clipping from exchanges; method of criticism, etc.

Newspaper Practice. Exercises in editorial writing, in reporting, in editing copy, handling telegraph service, condensation, interviewing, gathering news, etc.

Current Topics. Constitutional law; Political Science; History of the United States and of Missouri; economic questions; the libel law and other laws pertaining to newspapers; live issues of the United States and foreign countries; study of the best newspaper models; lectures by men engaged in the active work of the profession.

A thorough knowledge of English and general literature is indispensable to every journalist.

1. *English.* This study will be pursued on the side of English History, Composition, and Rhetoric throughout the course.

2. *History.* Modern History will be required and also General History. The study of Mediæval and Ancient History will not be required, but may be taken as elective work.

3. *Political, Economic, and Sociological Studies.* Political Economy, Political Science, Finance, History of Banking and Coinage, History of Industrial Development, Constitutional law, International law, and Sociology will be studied throughout the entire course.

An opportunity will be given to acquire a good reading knowledge of such Modern Languages as French, German, and Spanish. They will not be required, but may be taken as elective work.

III. Normal Department.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediæval History.

JOSEPH PHILIP BLANTON, A. M., LL. D.,

Professor of Theory and Practice of Teaching.

†**WILLOUGHBY CORDELL TINDALL, A. M., M. S.,**

Professor of Mathematics.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, and Assistant Professor of Mathematics.

JOHN MILLER BURNHAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology (Human and Comparative).

FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of History and Political Economy.

†Absent for session of 1897-1898.

JOHN PICKARD, A. M., Ph. D.,

Professor of Classical Archaeology, and Assistant Professor of Greek.

FRANK THILLY, B. A., Ph. D.,

Professor of Philosophy.

LUTHER MARION DEFOE, A. B.,

Acting Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,

Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,

Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M., Ph. D.,

Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,

Professor of Elocution.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Assistant Professor (in charge) of Geology and Mineralogy, and Acting Curator of the Geological Museum.

NORMAN COLMAN RIGGS, M. S.,

Acting Assistant Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CHARLES THOM, A. B., A. M.,

Instructor in Botany.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,

Instructor in Drawing.

INEZ RIGGS, M. L.,

Teaching Fellow in Germanic Languages.

HUGH ALLISON SMITH, B. L.,

Teaching Fellow in Romance Languages.

ROYALL HILL SWITZLER,

Teaching Fellow in Mathematics.

CLARENCE MARTIN JACKSON,

Teaching Fellow in Biology.

Theory and Practice of Teaching.

Professor BLANTON.

Admission :

The requirements for admission to the work of the Normal Department are the same as to any course in the Academic Department. See pages 23-9.

Courses of Instruction :

There are two distinct courses, one Elementary and one Advanced.

I. ELEMENTARY COURSE.

The Elementary Course is intended to prepare teachers for the public schools of the State. Students who complete the work may receive a State Certificate which authorizes them to teach in the public schools of Missouri for a period of two years from the date of the certificate.

Candidates for this certificate must meet the following requirements:

1. They must, when they enter upon the course, be free from all entrance requirements.
2. They must take or must have taken at least twelve (12) hours Academic work from the Freshman class of one of the courses outlined on pages 73-5 of this catalogue.
3. They must, during the Freshman or a later year, take three (3) hours a week of Elementary Pedagogics below outlined, and two (2) hours a week of Drawing in the College of Agriculture and Mechanic Arts, throughout the year, in place of five (5) hours a week of the regular Academic work required in the year and the course in which they belong. The omitted Academic work must, however, be later completed by all candidates for Academic degrees.
4. Any student who desires to do so may take Shopwork for two and one-half hours a week for two semesters, or five hours a week for one semester, instead of one hour of the twelve (12) hours of Academic work required under 2 above. Such omitted Academic work must, however, be done later by candidates for Academic degrees.

The following are the required studies in the Elementary Course in Pedagogics:

1a. History of Educational Theories. Lectures. Parallel readings and essays. *First semester, T. Th. S., at 11:30.*

1b. (1) Elements of Pedagogy; (2) Organization and Management of Schools. Lectures. *Second semester, T. Th. S., at 11:30.*

For the required course in Drawing see Index under "Drawing."

II. ADVANCED COURSE.

The Advanced Course is intended to prepare students as teachers in the Secondary Schools of the State. This course leads to the Normal diploma, which entitles the holder to teach for life in any public school in Missouri. This diploma is given to graduates of the Academic department who have met the following conditions:

1. In the Junior year, the application of three (3) hours in each semester to the work in Pedagogics—the time to be taken out of the electives. This work counts toward any Academic degree.

2. In the Senior year, the application of three (3) hours each semester to the work in Pedagogics. This work must be done in addition to the fifteen (15) hours required for Academic work in that year.

3. The completion of two (2) Teachers' courses of not more than three (3) hours a week for one semester. These courses are offered as electives to Normal students by the various Academic Professors, and count towards any Academic degree. The object is to show the best method of instruction in any given subject, the work done by the class being used as a basis for illustration. Students who have met these conditions successfully may receive a Normal diploma and a life certificate to teach in Missouri at the same time that they receive an Academic degree.

4. The Normal diploma will be conferred upon graduates of the Missouri College Union and of other reputable colleges and universities, in so far as their work is equivalent to that done in this University for Academic degrees, upon the completion by such graduates of not less than eight (8) hours a week for one year in Pedagogy and allied subjects.

The following courses are offered:

1. History of Education. Lectures. Essays, Reports and Discussions. *M. W. F., at 10:30.* (Junior.)

Special importance is attached to the study of the educational classics. Davidson's *The Education of the Greek People*, Davidson's *Aristotle and the Ancient Educational Ideals*, Plato's *Republic*, Clarke's *The Education of Children at Rome*, Quintillian's *Institutes of Oratory*, Montaigne's *Essays on Pedantry, Anger, and on the Education of Children*, Mulcaster's *Positions*, Bacon's *Advancement of Learning*, Comenius' *School of Infancy*, Milton's *Tractate on Education*, Locke's *Thoughts on Education*, Rousseau's *Emile*, Pestalozzi's *Leonard and Gertrude*, Spencer's *Education*, and Froebel's *Education of Man*, are read, wholly or in part, and discussed with reference to the development of educational ideals, methods and institutions.

2. Institutes of Education. Lectures. Recitations, and occasional essays.
T. Th. S., at 8. (Senior.)

This course must be preceded or accompanied by course 1 in Philosophy, page 84. Texts: Rein's Outlines of Pedagogy, McMurray's General Method, Lange's Apperception, and Rosenkranz's Philosophy of Education. Bi-weekly reports of observations of work in the Columbia Public Schools, and lesson plans on subjects assigned, will also be required.

- 3a. School Systems of Europe. Lectures. Readings and reports. *First semester, M. W. F., at an hour to be selected.* (Junior Elective.)

Texts: Reports of U. S. Commissioner of Education, Paulsen and Hart's Universities of Germany, Klemm's European Schools, and others.

Courses 1, 2, are required for the Normal diploma and life certificate.
Course 3a is elective.

Degree of Bachelor of Pedagogics :

The degree of Bachelor of Pedagogics (B. P) will be conferred on any graduate of the Academic department of the University holding the Normal diploma and life certificate, upon application to the Board of Curators after two years of successful teaching, and upon the presentation to the Faculty of a thesis. This is to be known as the thesis for the Bachelorship in Pedagogy, and must be submitted by the candidate not later than May 1 preceding the Commencement at which the conferment of the degree is sought. The thesis must discuss a subject belonging to one of the courses of study in Pedagogy, and must show original treatment or give evidence of independent research. The number of words in the thesis must not be less than five nor more than ten thousand.

Special Courses for Teachers :

Special courses of instruction are annually offered by Professors in the University to teachers of the State free of all charges, beginning April 1, and continuing two months. Due announcement of the courses to be offered in 1899, beginning April 1, will be made during the second semester by circular to teachers. No fees are charged for these courses.

In the summer of 1898, the University will offer courses in Biology, English, Latin, Mathematics, Physics, Shopwork and Drawing. They are especially for the advantage of public school teachers of the State, though open in some subjects to regular students in the University. The first term of the summer work begins June 6. Circulars giving full details may be had upon application by letter to the University. See Appendix.

IV. Department of Law.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ALEXANDER MARTIN, LL. D.,
Professor of Law, and Dean of the Faculty.

JAMES AULL YANTIS, LL. B.,
Professor of Law.

JOHN DAVISON LAWSON, LL. D.,
Professor of Law.

ANDREW WALKER MCALESTER, M. D., LL. D.,
Lecturer on Medical Jurisprudence.

Hon. ELMER B. ADAMS, Judge of the U. S. District Court for the Eastern District of Missouri,
Non-resident Lecturer on the Law of Wills and Administration.

Hon. JAMES A. SEDDON, LL. B., Ex-Judge of Circuit Court of St. Louis,
Non-resident Lecturer on Commercial Law.

Hon. FRANCIS M. BLACK, of Kansas City, Ex-Chief Justice of Missouri,
Non-resident Lecturer on Equity Jurisprudence.

Hon. JAMES B. GANTT, Presiding Judge of Division No. 2 of the Supreme Court of Missouri.
Non-resident Lecturer on Corporations

Requirements for Admission:

If unknown to the Faculty the candidate must bring satisfactory testimonials of good character.

JUNIOR CLASS.—For admission to the Junior Class, no examination in Law is imposed. Students may be admitted at any time during the session by fulfilling the requirements for entrance and by passing an examination upon the work in Law accomplished by the class at the date of the examination.

It is the purpose of the University to raise gradually the standard of Academic requirements necessary for admission to the department of Law.

Candidates for admission are earnestly advised, therefore, to complete, if they can, a college course, or at least a full course in a good High School.

Students may enter by certificate or diploma or by examination.

Entry by Certificate or Diploma.—Any applicant presenting to the Committee on Entrance by Diploma a certificate or diploma from the President or Principal of any approved High School, Academy, Normal School or College, showing that in any course of study in which said School, Academy or College has been approved by the University for the Academic Department, the applicant has accomplished with passing grades all the work required for admission to the Law Department as hereinafter prescribed, may in the fall of 1898, 1899 and 1900 be admitted without examination.

Certificates or diplomas indicating or clearly implying the requisite qualifications for admission to the Law Department as hereinafter prescribed will also be honored. *First*, from all Universities and Colleges which the Committee on Entrance by Diploma shall find to be of unquestionable high standing. *Second*, from all Normal Schools, High Schools and Academies whose courses and quality of instruction shall be found by the Committee on Entrance by Diploma to correspond with the standard of requirements for admission to the Law Department of the University as hereinafter stated under the head of Entrance by Examination.

In the absence of such certificates or diplomas the applicant for admission must pass a satisfactory examination before the professors of the Academic department for the examination of applicants for admission to said department, as follows:

Entrance by Examination.—A unit means a year's work (nine months) in one subject in a good High School, Normal School or College, with five periods a week in the class-room or laboratory, each recitation lasting about forty minutes. Requirements for admission by examination are estimated in units, as will appear below.

In the fall of 1898 the requirements for admission will be four units, as follows:

1. *History.*—The applicant will be examined in the equivalent of the work given in Myers' General History—one unit.

2. *English.*—The examination will be on the essentials of English Grammar (any text-book of High School grade) and Composition (no text-book). He will be expected to have read at least as much literature as is required in the first year of a good High School—one unit.

3. *Mathematics.*—The applicant must have a knowledge of Algebra, the equivalent of that found in Milne's High School Algebra up to Quadratic Equations. Instead of Algebra, Geometry will be accepted as given in Phillips and Fisher's Plane Geometry—one unit.

4. *Latin.*—The examination in Latin must show a thorough mastery of Collar and Daniell's First Latin Book, or Gildersleeve's Latin Primer, or some other beginner's book fully equivalent to these—one unit.

These units represent the first year's work of an approved High School. The student must pass without condition the examinations on at least three out of the four subjects required. On one of the four subjects he may be conditioned, said condition to be made up in the first year in the University under arrangements to be approved by the Academic Professor of the subject.

In the fall of 1899 the requirements for admission, in addition to the requirements for admission in 1898, will be four units, as follows:

1. *History*.—Green's Short History of the English People—one unit.
2. *English*.—Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant will be expected to have read, at least, as much literature as is required in the second year of a good High School—one unit.
3. *Latin*.—Three books of Cæsar's Gallic War, and the Composition based thereon in Moulton and Collar's "Preparatory Latin Composition," or in Daniell's "New Latin Composition." For the Cæsar Nepos may be substituted—one unit.
4. *One unit* to be offered in any one of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. These units, along with the units of 1898, will represent two years' work in an approved High School. The applicant may be conditioned on any two units, both to be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise one unit must be made up in the Junior year, and the other in the summer thereafter, or in the Senior year.

For the fall of 1900 the requirements for admission will be the same as those prescribed for the fall of 1899.

In the fall of 1901 the requirements will be twelve units, as follows:

1. *English*.—Three units—the same as prescribed for admission to the Academic Department—see page 23.
2. *Latin*.—Two units—the same as prescribed above for the year 1899.
3. *History*.—Two units—the same as prescribed above for the year 1899.
4. *Five units*, to be offered from any of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. Any number of units may be offered in one subject, or only one may be offered in one subject. These twelve units represent three years' work in an approved High School, which articulates with the Academic Department of the University.

The student may be conditioned upon two units, both of which must be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise, one unit must be made up in the Junior year, and the other in the following summer, or in the Senior year.

No student will be allowed to graduate in Law until all Academic conditions that may have been incurred at entrance have been made up within the time prescribed, and under arrangements approved by the Academic Professors of the subjects in which the conditions have been incurred.

In any summer, students conditioned at entrance in Academic studies and those purposing to enter may avail themselves of the Summer School of the University, and receive credit for work done therein according to the rules of said school. See Appendix.

All examinations for entrance will be under the charge of the Academic Professors of the subjects required or offered for admission.

SENIOR CLASS.—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, is possessed of the academic education and moral character required for admission to the Junior class, and has passed a satisfactory examination upon the studies of the Junior year. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the term, and the applicant will be admitted to the class as a candidate for a degree, upon condition that he pass at the time appointed a satisfactory examination on such branches. No one is permitted to pursue in one year the full course of two.

GRADUATE CLASS.—No one will be admitted to this class as a candidate for the degree of LL. M. unless he holds the degree of LL. B. from the Law Department of this University, or is a graduate of some other law school, whose course of instruction and study, upon which his degree is predicated, is equivalent to the course of instruction and study required for the corresponding degree in the Law Department of this University. No admission to the Senior class or the Graduate class will be permitted after two weeks from the commencement of the school year.

SPECIAL CLASS.—For admission to instruction as special students, the same moral and academic qualifications are required which are prescribed for admission to the other classes. No qualifications in law are required.

COURSES OF STUDY.

The principal object of the courses of study adopted in the school is to qualify its graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the school to cram its students for the purpose of qualifying them to pass the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedial procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to the bar. As the degree of LL.B. from this Department entitles the

graduate to admission to the bar of the State of Missouri, the Faculty cannot overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is a great similarity in the general statute and judiciary law of the Western, Northwestern and Southwestern States, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said States.

Undergraduate Course :

The undergraduate course covers a term of two years. There are two classes—Junior and Senior. Instruction is given daily to these classes, in the form of lectures, recitations and examinations upon the text-books recommended, and upon leading cases furnished by the Faculty. Every Tuesday they participate in the exercises of a Moot court.

I. The Junior class receives instruction in the following subjects:

1. Torts, Elements of Law of Real Property; by Professor YANTIS.
2. Contracts, Bailments, Personal Property Sales; by Professor LAWSON, and Special Lecturers.
3. Negotiable Instruments, Parliamentary Law; by the DEAN, and Special Lecturers.

II. The Senior class receives instruction in the following subjects:

1. Real Property, Evidence, Criminal Law; by Professor YANTIS.
2. Equity Jurisprudence, Pleading and Practice at common law, in equity and under the code, Corporations, Constitutional Law; by the DEAN, and Special Lecturers.
3. Insurance, Partnership, International Law; by Professor LAWSON.
4. Law of Wills and Administration; by Special Lecturers.

The text-books recommended are as follows:

For the Junior Year—

On Elements of Law of Real Property.....	Warville
On Torts.....	Hale, Pollock, Cooley
On Contracts.....	Lawson
On Agency.....	Story, Meecham
On Sales.....	Tiedeman, Brown, Benjamin, Tiffany
On Bailments.....	Lawson
On Personal Property.....	Smith, Lawson's Cases
On Domestic Relations.....	Brown, Schouler
On Negotiable Instruments.....	Norton, Bigelow
On Parliamentary Law.....	Roberts, Cushing

For the Senior Year—

On Real Property.....	Tiedeman, Williams, Washburn
On Wills.....	Chaplin
On Evidence.....	Greenleaf, Best, Starkie
On Criminal Law.....	Hawley & McGregor, Bishop
On Insurance.....	Richards, May
On International Law.....	Lawrence, Glenn
On Equity Jurisprudence.....	Bispham, Merwin, Fetter
On Pleading and Practice.....	McKelvey, Bliss, Heard, Desty
On Constitutional Law.....	Black, Cooley
On Corporations.....	Clark, Thompson, Murfree
On Partnership.....	Pollock

Graduate Course:

This course is open to graduates of the Law department and to those of other law schools who have completed an equivalent course of study.

The object of the Graduate course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures and recitations on the following subjects:

Constitutional Law, Contracts, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student in this course is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students the instruction in this course.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Underhill on Trustees; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland's Jurisprudence; Pattison's Forms.

Special Course:

Students who do not wish to take any of the full courses, and who are not candidates for any degree, will be permitted to take an elective course, and pursue branches of instruction given in the Department, the exercises of which do not conflict with one another. They will be classed as special students, and will receive from the Faculty certificates of the time spent in the study of the law and of the work therein accomplished.

METHODS OF INSTRUCTION.

In the Department of Law instruction is given by means of Lectures, Recitations, Examinations, and the study of Treatises and Cases.

The first benefit inuring to the student who enters a good law school is to learn how to study law, as distinguished from merely reading it. A student in an attorney's office is too apt to continue, in his study of law, the superficial habit acquired by him in the perusal of newspapers, literary periodicals and novels.

On entering the school he is instructed in the proper method of reading treatises and reports of cases, of examining questions of law, of taking notes of lectures, and of handling digests, dictionaries and compilations of the law.

The Law Faculty is satisfied from experience that the highest results cannot be reached by lectures alone, however clear and thorough they may be; but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subject upon which he has received instruction, he should be required to stand frequent examinations on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the Professor for his investigation. In this manner, it is believed, he will receive the full advantages of the lecture and recitation methods of instruction as applied to the study of treatises, and to the examination and analysis of cases. In addition to lectures and recitations, the classes are divided into sections and subjected to quizzes conducted by members of the class, appointed by the Professor for that purpose. The members are also required to explain and develop in the lecture-room subjects assigned to them by the Professors. A combination of these different methods has, in the opinion of the Faculty, produced the most satisfactory results.

Moot Court :

Every Tuesday a Moot Court is held, in which all Law students participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and when the cause is supposed to be in the Supreme Court, in addition to the pleading, papers are prepared necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, ruling upon the admission or exclusion of evidence, motions for new trial, in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Faculty presides at the trial, determining all preliminary and incidental

motions. A member of the Senior class or Graduate class is called to sit as special judge in each cause, who, the next week, gives his opinion in writing, subject to appeal to the member of the Faculty present at the trial. Practical instruction in pleading is given by requiring half of the members of a class to draft pleadings in causes assigned to them, and to submit them to the other half. The pleadings thus drafted are discussed and settled in the presence of the Professor giving instruction on that subject.

DEGREES AND HONORS.

Degrees :

Members of the Senior class who have successfully passed the examinations of the Senior year will be entitled to receive the degree of Bachelor of Laws. Members of the Graduate class who have successfully passed the prescribed examinations will be entitled to receive the degree of Master of Laws.

All who receive from this University the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all courts of the State of Missouri.

Honors :

Whenever a candidate for graduation attains a high degree of excellence in his class-work the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction; and the words *cum laude* or *magna cum laude* will be incorporated in the diploma. In determining the required degree of excellence the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.

The members of the Senior class are all invited to write essays upon some subject in law, assigned to them by the Faculty before January 1 of each year. The essays so written are submitted to a committee of judges charged with the duty of designating the best two of said essays. The names of the authors of the best two essays are placed on the Commencement program. Students not writing essays as aforesaid, and not excused therefrom by the Law Faculty, shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation.

Prizes :

A prize of \$50, provided in the endowment fund of the Hon. James S. Rollins, is awarded each year, at Commencement, to the member of the Junior Law class, who by superior scholarship and moral conduct, has shown himself entitled thereto.

The Edward Thompson Company, Law Publishers, of Northport, New York, give annually to the author of the best thesis submitted by members of the Senior Law class a prize consisting of a complete set of their famous American and English Encyclopædia of Law. This set consists of thirty-one volumes, and is valued at \$100.

ADVANTAGES.

The advantages now offered by the University of Missouri for instruction in the science and practice of common law and equity, as prevailing in the United States, have been greatly increased within the last few years.

Accommodations :

Since the destruction of the main building of the University by fire, January 9, 1892, the Curators have erected a large, commodious structure for the use of the Law department. It contains a spacious library-room, two large lecture-rooms, moot court and club-rooms, quiz-rooms, and offices for the Professors.

Libraries :

The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing every year, the Thirty-eighth General Assembly of the State having in 1895 appropriated five thousand dollars to that end, which has been expended in the purchase of treatises and reports. All the decisions of the American courts are received as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and Professors. Members of the Law department have access also to the general library of the University.

Academic Facilities :

The connection of the Law department with the University enables the law student, without additional charge, to take instruction in other departments of the University, provided it does not interfere with his legal studies. Some members of every class have found it convenient to pursue such studies as Latin, French, Logic, English, Military Science, Political Economy, History, Stenography, Elocution, etc.

University Societies :

Members of the Law department are eligible to membership in the two literary societies of long standing in the University known as the "Athenæan" and the "Union Literary." They are also eligible to membership in the "Bliss Lyceum," to which members of the Law department alone are admitted.

These societies are nurseries of oratory, debate and parliamentary law.

GENERAL INFORMATION.

The Department of Law is open alike to men and women. Women that do not wish to practice in the courts often find a knowledge of law valuable to them as stenographers in lawyers' offices.

For enrollment of students in the Department, see the Index.

The Law department opens with the other departments of the University, on the second Tuesday in September, and closes on the first Wednesday in June of each year.

Examinations for admission will be held on the second Tuesday in September, at 9 o'clock a. m.

Examinations for admission may be accorded at other times, upon request, to suit the convenience of applicants.

For information as to the tuition charges and expenses of the Law department, see page 45.

For further information and catalogues, address

ALEXANDER MARTIN, Dean,
Columbia, Mo.

V. Department of Medicine.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,
Dean of the Faculty, and Professor of Surgery and Obstetrics.

WOODSON MOSS, M. D.,
Professor of Anatomy and the Practice of Medicine.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Physiology (Human and Comparative)

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

WILLIAM OPHUELS, M. D.,
Professor of Bacteriology and Pathology.

RICHARD B. MOORE, B. S.
Instructor in Chemistry.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

ROBERT LEE REID, M. D.,
Teaching Fellow in Materia Medica

G. R. HIGHSMITH, B. S., M. D.,
Lecturer on Railroad Surgery.

A. B. MILLER, A. B., M. D.,
Lecturer on Gynecology.

This department is open alike to men and to women.

REQUIREMENTS FOR ADMISSION FOR THE SESSION OF 1898-99.

If unknown to the Dean the applicant must present a certificate of good moral standing.

Entrance by Diploma:

The applicant must present a Certificate or Diploma from a literary or scientific College, Normal School, or High School, approved by the University. See pages 27-31.

Entrance by Examination:

(a) *Value of Units:* A unit is defined as a year's work in any one subject with five (5) periods a week in class-room or laboratory, each period being about forty (40) minutes. If the applicant passes a satisfactory examination in any one subject, covering one, two, or three years' work, credit will be given for one, two, or three units respectively.

(b) *Units Required for Entrance:* The applicant must pass on eight (8) units, of which at least one must be made in English and one in Algebra. For the remaining 6 units examinations may be taken on subjects chosen from the following list. One or more units may be made in any one subject.

LIST OF SUBJECTS.

English,	Latin,	Physics,	General Biology,
Algebra,	Greek,	Chemistry,	Botany,
Geometry,	German,	Zoology,	History,
French.			

(c) *Conditioned Students:* If the applicant pass on *one* unit of English and *one* unit of Algebra, and on four (4) additional units, he may be conditioned on the remaining two (2) units. The condition, however, must be removed before entrance upon the second year in Medicine.

(d) *Interpretation of One Year's Work:* The nature and content of the work are about what is required in any good High School. Where a text-book is indicated any other text of similar grade may be substituted.

English: *First year*.—English Grammar (any text-book of High School grade), and Composition (no text-book). The applicant will be expected to have read at least as much Literature as is required in the first year of a good High School—one unit. *Second year*.—Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant will be expected to have read as much Literature as is required in the second year of a good High School—one unit.

Algebra: *First year*.—Milne's High School Algebra to Quadratics—one unit. *Second year*.—Milne's High School Algebra from Quadratics to end—one unit.

Geometry: Phillips and Fisher's Plane Geometry—one unit.

History: *First year*.—Myers' General History—one unit. *Second year*.—Green's Short History of the English People—one unit.

Latin: *First year*—Collar & Daniell's First Latin Book—one unit. *Second year*—Three Books of Cæsar, with Composition based thereon—one unit.

Greek: White's First Greek Book—one unit.

German: Harris's German Lessons, Joynes-Meissner's Grammar, Joynes-Meissner's Reader—one unit.

French: Conjugation of verbs, regular and irregular; Rollin's Reader, completed; simple sight-reading as found in *Le Mariage d'Amour*, *L'Abbe Constantin*, or *Madame Therese*—one unit.

Physics: Gage's Introduction to Physical Science, with Laboratory work—one unit.

Chemistry: Shepard's Elements of Chemistry, with Laboratory work—one unit.

General Biology: Boyer, with Laboratory work—one unit.

Botany: Bergen's Elements of Botany, with Laboratory work—one unit.

Zoology: Colton's Zoology, with Laboratory work—one unit.

It is important that such applicants as are able to do so present to the President of the University a certificate from the President of a College or Normal School, or the Principal of a High School or Academy, showing what work they have finished with passing grades.

Students who enter the Academic Department and who contemplate taking a Medical degree in the future, may, by suitable selections of subjects in elective work, shorten the course in Medicine by at least one year. For example, the student may elect Physiology or Anatomy, or both, from the first year, for six (6) hours a week for two semesters. Furthermore, the student may give the electives to Physics, Chemistry, Histology, or Biology, all of which are required for the Medical degree.

COURSE OF INSTRUCTION.

First Year.

First semester:		Second semester:	
Chemistry.....	4	Chemistry.....	4
Physics.....	4	Physics.....	4
Anatomy (Osteology).....	3	Anatomy and Dissection.....	4
Comparative Anatomy (Viscera)...	3	Physiology.....	6
Normal Histology.....	4		

Second Year.

First semester:		Second Semester:	
Anatomy.....	2	Anatomy.....	2
Physiology.....	4	Dissection.....	2
Chemistry.....	4	Chemistry.....	3
Bacteriology.....	6	Practice of Medicine.....	3
Embryology.....	2	Pathology.....	3
		Materia Medica.....	2
		Obstetrics.....	3

Third Year.

First semester:		Second semester:	
Practice of Medicine.....	3	Practice of Medicine.....	3
Surgery.....	3	Surgery	3
Obstetrics.....	2	Gynecology	2
Surgical Anatomy.....	2	Therapeutics	2
Therapeutics	2	Electro-Therapeutics.....	3
Toxicology.....	2	Clinical Pathology.....	2

The figures indicate the number of hours a week in the lecture-room. Two and a half hours in the laboratory are reckoned as only one hour in the lecture-room.

PLAN OF INSTRUCTION.

Instruction is given by lectures, recitations, clinical teaching, and laboratory work.

The length of the session, nine months, renders it practicable to distribute the different branches among the teachers in a satisfactory manner, and in their natural order and succession. The student is thoroughly drilled each day by examinations upon the lectures of the previous day, and by recitations from text-books.

By this method of teaching, it is believed that the process of cramming—a deleterious practice, too prevalent in the general system of medical education—is avoided; and much will be done to elevate the standard of medical education, and to exalt the dignity of the profession.

The students are taught the use of the microscope, in both pathological and physiological studies. The methods of bacteriological, physiological and histological investigation are taught by practical work in the laboratories.

Medical students in their first year may take, without additional fee, any work offered in the Academic Department and in the Schools of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but the total number of hours shall not exceed 18 a week, and such work shall not count toward the degree of M. D. unless it is included in the regular Medical course. Academic students, on the other hand, may take Anatomy and Physiology in the first year of the Medical course, preparatory to entering on the full Medical course after graduating in Arts or Science. (See page 71.) Such students are admitted to the Second Year's Medical class.

LABORATORIES.

The following courses are required:

Chemistry:

1. Elementary Inorganic Chemistry. Lectures, *T. Th.*; Laboratory, *two hours, at 1:30.* (First Year.)

- 2a. Qualitative and Urinary Analysis. Lectures, with laboratory exercises at option of instructor. *First semester, T. W. F. S., at 1:30.*

(Second Year.)

- 3b. Organic and Physiological Chemistry. *Second semester, three hours a week.*

(Second Year.)

- 4a. Toxicology. *First semester, two hours a week.*

(Third Year.)

Physics:

2. Elementary Physics. Lectures and recitations, *M. F., at 11:30. Laboratory, T. Th., at 1:30.*

(First Year.)

- 7a. The Practical Application of Electricity in Medicine and Surgery. *First semester, T. Th. S., at 9:30.*

(Third Year.)

Text: Liebig and Röhe.

Biology:

- 1a. Comparative Anatomy of Vertebrates (Macroscopic and Microscopic). Lectures and Laboratory. *First semester, seven hours a week.*

Wiedersheim's Comparative Anatomy of Vertebrates, Gray's Anatomy, Gorham & Tower's Anatomy of the Cat, Schaefer's Histology.

2. Comparative Embryology of Vertebrates. Lectures, *one hour a week; Laboratory, three hours a week.*

Minot's Human Embryology, Marshall's, Vertebrate Embryology.

3. Comparative Neurology of Vertebrates. Lectures and Laboratory.

(Elective.)

Courses 1 and 2 are required for admission to this course. Texts: Edinger's Anatomy of the Central Nervous system, and Obersteiner's Central Nervous System.

Physiology :

- 1b. Lectures and Laboratory. *Second semester, six times a week.*

(First Year.)

The topics considered are: The blood, circulation, muscle, nerve, digestion, respiration, excretion, etc. The course must be preceded by one semester's work each in Comparative Anatomy, Histology, Physics and Chemistry. Text: Foster's Physiology; Collateral reading—Landois, Waller. Laboratory Manual—Stirling's Practical Physiology.

This course is elective for Academic students.

- 2a. Lectures and Laboratory (a continuation of course 1b). *First semester, four times a week.*

(Second Year.)

Topics—Metabolism, nutrition, nervous system, and reproduction. Course 1b must precede. Text: Foster's Physiology; Collateral reading—advanced texts and journals.

Laboratory and Equipment.—The laboratory occupies rooms 2 and 3 in the north wing of the Museum Building, is well lighted, and is furnished with new laboratory tables suited to the work.

The laboratory is supplied with glassware, chemicals, microscope, a microtome, and a fair equipment of apparatus for graphic and other work, as induction coils, batteries and keys, rheocord, moist chamber, kymograph, student's drums, pendulum myograph, manometers, Marey's tambours, sphygmograph, cardiograph, stethograph, electric time-markers, contact clock, metronomes, tuning fork and electro-magnet, rheonome haemacytometer, haemometer, micrometers, artificial eye phakoscope, perimeter, stromuhr, oncometer, electrometer, saccharimeter, ureometer, etc.

Bacteriology :

- 1a. Bacteriology. Lectures two hours, laboratory two hours. *First semester, four hours a week.* (Second year.)

The lectures introduce the students into the general questions in Bacteriology: the nature and development of bacteria, the history of Bacteriology, sterilization and disinfection, immunity and disposition. In the laboratory they are instructed in the preparation of culture media and in the methods of obtaining pure cultures. They study some saprophytic and the most important parasitic bacteria in pure cultures on the different media and in microscopic preparations. Special attention is given to all practical points: the bacteriological diagnosis of cases of infectious diseases, and the bacteriological examination of water, air, soil, dairy products. Text-book: Abbott's Principles of Bacteriology.

Pathology :

- 1a. General Pathology. Lectures. *First semester, two hours a week.* (Second year.)

This course consists of lectures and recitations on general questions in Pathology, which are illustrated with microscopic preparations and, as far as possible, with macroscopic hardened or fresh specimens. Text-book: Ziegler's General Pathological Anatomy.

- 1b. Special Pathology. Laboratory. *Second semester, three hours a week.* (Second year.)

Part of the laboratory hour is devoted to the systematic study of the most important pathological changes found in the different organs of the body, which are illustrated with figures and hardened and fresh pathological specimens. The student then prepares and studies microscopic specimens of those diseases, the gross morbid anatomy of which he has studied during the first part of the hour.

2b. Clinical Pathology. Second semester, two hours a week. (Third year.)

The student is instructed in the microscopic examination of sputum, blood, urine, pus, scrapings, pieces of tumors, etc.

Anatomy:

Facilities are afforded the students for the thorough study of Anatomy. Provision is made for a supply of subjects amply sufficient for the number of students. The dissecting rooms are large and well ventilated, and are open during the whole winter season, where, under the guidance of a demonstrator, the student, by dissecting, acquires a practical knowledge of the human body in all parts.

The Physiological, Bacteriological and Pathological laboratories are located in the Biological building. The Professors of Surgery, Obstetrics, and Practice of Medicine, have rooms on the first floor of the Academic Hall. The old medical building is now the Anatomical Hall.

Clinics:

The number and variety of Medical and Surgical Clinics are ample for purposes of instruction.

DEGREES.

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred. The degree of "M. D. *cum laude*." is given to all graduates in the Medical course who have the degree of A. B., B. S., or B. L.

REQUIREMENTS FOR GRADUATION.

1. The candidate must have completed the course prescribed and passed a satisfactory examination thereon.

2. He must be twenty-one years of age, and must exhibit evidence satisfactory to the Faculty of possessing a good moral character.

3. His last course of lectures must have been attended in this Department.

4. He must have been regular in attendance upon lectures and recitations and in laboratories.

5. Every candidate must appear before the members of the Faculty for examination in the various branches in the course, at the time appointed for such examinations.

6. Conformity to the general laws established by the Curators and the Faculty for the government of the University, faithful discharge of duties, and regular attendance upon lectures and laboratories, are required of all students.

For tuition charges, fees, etc., see "Expenses," pages 45-8.

For further information, address

A. W. McALESTER, M. D.,
Dean of Medical Faculty.

For catalogues, address

IRVIN SWITZLER,
Secretary Medical Faculty.

VI. Department of Military Science and Tactics.

ABRAHAM PERRY BUFFINGTON, 1st Lieut. 18th U. S. Infantry,

Professor of Military Science and Tactics, and Commandant of Cadets.

Requirements for Admission:

No cadet will be received who is under 16 or over 25 years of age, or who is less than five feet one inch in height, or who is in any way physically disqualified for military service.

All male students of the University not physically disqualified, who come within the limits of age and height, will be allowed to enroll themselves as voluntary cadets, but only State cadets will be matriculated in the Academic department of the University and in the College of Agriculture (including Engineering) without payment of the tuition fees, and provided with the tailor-made uniform without expense to themselves. A copy of the regulations for the government of cadets is given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the Commandant for duty *before* September 25th of each year. They should report by the 10th of September, if possible.

Cadet Officers:

Battalion Staff and Non-commissioned Staff.

Cadet Major.....	G. H. English, Jr
Cadet First Lieutenant and Adjutant.....	R. H. Switzler
Cadet First Lieutenant and Quartermaster.....	M. F. Highley
Cadet Sergeant Major....	J. E. Tiedeman
Cadet Quartermaster Sergeant.....	J. O. L. McKnight

Company A.

Cadet Captain.....	W. H. Turner
Cadet First Lieutenant.....	R. S. Edmunds
Cadet Second Lieutenant.....	J. C. Edwards
Cadet First Sergeant.....	H. D. Dow

Company B.

Cadet Captain.....	K. H. Hansen
Cadet First Lieutenant.....	A. U. Brandt
Cadet Second Lieutenant.....	W. H. Seward
Cadet First Sergeant.....	O. E. Shultz

Company C.

Cadet Captain.....	G. E. Huggins
Cadet First Lieutenant.....	J. L. McDermott
Cadet Second Lieutenant.....	C. L. Parkhurst
Cadet First Sergeant.....	A. McReynolds

Band.

Band Leader.....	F. Pannell (civilian)
Drum Major.....	J. N. Wilson

Those cadets are appointed to office who show ready obedience, zeal, and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

Equipment and Supplies :

One hundred and fifty Springfield cadet rifles of the latest model, one Gatling gun, cal. 45, with full equipment, two 3-inch rifled field-guns, with carriages and implements, and a suitable amount of ammunition and target materials, are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc. The University supplies instruments and instruction for the band.

Uniforms :

Cadets wear but one style of uniform, known as the undress or fatigue uniform. Uniforms must be worn at all military exercises, and may, with permission of commandant, be worn on special occasions. Tailor-made uniforms are supplied to volunteer cadets at a contract price. The State furnishes uniforms to regularly appointed cadets free of cost (usually one entire uniform and one extra pair of trousers every year to each appointed cadet, depending upon amount of appropriation by Legislature).

COURSE OF INSTRUCTION.**FIRST YEAR.**

Practical instruction in the Schools of the Soldier, Company and Battalion (infantry), and Extended Order.

Practical instruction in rifle-firing, 100, 200, and 300 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of guard mounting, dress parade, inspection, review, muster and extended order.

Recitations in guard duty and cadet regulations.

SECOND YEAR.

Practical instruction in the Schools of the Company and Battalion, and in Extended Order.

Practical instruction in the service of field-guns (foot battery), with mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200 and 300 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations, School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted, etc.

Lectures are given on Army Organization, the Army of the United States, Army Regulations, Courts Martial and Military Law, the Customs of War, Security and Information (including outposts, advance and rear guards, patrols, reconnoissances, orientation and map reading), Guard Duty, Castrametation, Field Service, Field Fortifications, Rifle Firing, and Target Practice.

Certificate of Proficiency :

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in Military Science and Tactics, but it is the rule now adopted in the University that the certificate will be issued to every cadet, state or volunteer, who takes the entire course and attains a grade of at least 70 per cent in *every examination* given during the two years in Military Science and Tactics.

Appointment of State Cadets :

The following extracts from the Militia law of the State of Missouri, enacted by the Thirty-eighth General Assembly, revised by the Thirty-ninth General Assembly, and now in force, will be of interest to those who desire to receive the appointment of cadet :

“Be it enacted by the General Assembly of the State of Missouri, as follows:

SECTION 1. The military department of the University of the State of Missouri as organized under section 1225, Revised Statutes of the United States, and section 8741, Revised Statutes of Missouri, 1889, is created the Missouri State Military School.

SECTION 2. The corps of cadets of the Missouri State Military School shall consist of appointees of Senators and Representatives, and such students as may voluntarily enter such school. All appointments under this section shall be for the term of two years. Each Senator and Representative of the General Assembly of Missouri shall have power to appoint a cadet from his district by the first day of August of each year: Provided, that if there shall be no application for such cadetship in any district by the first day of August, in any such year, then such appointment may be made from any other district in this State; and provided, that in case of

death, resignation or expulsion from the University of any cadet from such district, the Senator or Representative thereof may fill such vacancy at any time. All appointees under this section shall pass the required examination for admission to the University.

SECTION 3. Cadets receiving instructions, as provided in preceding section, shall be matriculated in all Academic departments, and in the College of Agriculture and Mechanic Arts of the University, free from tuition and other fees.

SECTION 4. The corps of cadets, as provided in the preceding sections, shall have the military organization prescribed for the National Guard of the State and be reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri.

SECTION 5. The military government and discipline of the cadets shall be prescribed by regulations prepared by the Faculty of the University and approved by the Governor of the State. The officers of the corps of cadets shall be appointed and commissioned by the Governor of the State, upon the recommendations of the Faculty of the University, and shall have the powers conferred by said regulations.

SECTION 6. Cadets shall be individually responsible for all State property issued directly to them, and shall constitute a guard for the safe-keeping and preservation of all University property."

Approved April 11, 1895.

Regulations:

Cadet regulations prescribe that military drills, etc., shall be held at least three hours a week, one of which shall be for theoretical and two for practical instruction. The regulations require also, whenever the means of the University permit it, an annual encampment of from eight to ten days, during which the instruction is entirely military and practical. Here the cadets are put through all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300 and 400 yards, perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed by the two years' course. The expenses of the encampment are borne by the University.

Enrollment:

During the present session 188 cadets have received instruction in Military Science and Tactics.

State Commissions:

Senate Bill No. 66, 39th General Assembly, provides as follows:

"Article III. Section 33. Every graduate of any college in the State of Missouri, in which military instruction is regularly given by an officer of

the United States army, detailed for that purpose, who shall have received military instruction during a course of four years, shall be entitled to a commission as brevet second lieutenant of the National Guard of Missouri, subject to such physical examination as to ability as the commander-in-chief may from time to time prescribe: Provided, that application for such commission be made within one year after graduation from such college, and that such applicant shall be at the time a citizen of the State of Missouri."

VII. College of Agriculture and Mechanic Arts.

FACULTY.

Except those of the President and the Dean, names are printed in order of appointment.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D., LL. D.,
Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

†WILLOUGHBY CORDELL TINDALL, A. M., M. S.,
Professor of Mathematics.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

†CHRISTIAN WILLIAM MARX, B. E.,
Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. O., M. D.,
Professor of Veterinary Surgery.

†Absent for session of 1897-8.

†Absent for the first semester of 1897-8.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,
Lecturer on Ancient Architecture.

†HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Acting Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

†WALTER ALONZO THURSTON (First Lieutenant U. S. Army),
Professor of Military Science and Tactics.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLAKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor of Electrical Engineering.

†Absent for second semester of 1897-1898.

†Appointment expired Feb. 5, 1898.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Assistant Professor (in charge) of Geology and Mineralogy.

WILLIAM OPHUELS, M. D.,

Professor of Bacteriology and Pathology.

NORMAN COLMAN RIGGS, M. S.,

Acting Assistant Professor of Mathematics.

ABRAHAM PERRY BUFFINGTON (First Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

†T. E. WHITE, D. V. S.,

State Veterinarian, and Lecturer on Veterinary Surgery.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,

Instructor in Drawing.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

CHARLES THOM, A. B., A. M.,

Instructor in Botany.

‡A. E. HACKETT,

Lecturer on Climatology.

CLARENCE MARTIN JACKSON,

Teaching Fellow in Biology.

INEZ RIGGS, M. L.,

Teaching Fellow in Germanic Languages.

HUGH ALLISON SMITH, B. L.,

Teaching Fellow in Romance Languages.

ROYALL HILL SWITZLER,

Teaching Fellow in Mathematics.

†In the service of the State Board of Agriculture.

‡In the service of the U. S. Government.

Historical Statement:

This College had its origin in the beneficence of National, State, and local governments. Its location, objects, and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

"Its leading objects shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." (Act of Congress, 1862, Sec. 4.)

"There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct Department of the University of the State of Missouri." (R. S. of Missouri, Sec. 8738.)

"To effect the said leading objects of the College, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets, and apparatus, and to all lectures and instructions of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as the students of any other Department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established by Congress, the State University is hereby required by law to make the necessary provision for carrying out the plan so established in connection with the institution." (R. S., Sec. 8741, p. 2017.)

"The Agricultural and Mechanical College, and the School of Mines and Metallurgy herein provided for, shall have each a separate and distinct Faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other Colleges and Departments of the University." (R. S. of Missouri, Sec. 8742.)

"In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University the county of Boone shall donate not less than \$30,000 in cash, to be used in erecting such buildings and making such improvements as may be needed for such College, and also for a Mechanical College in connection with the State University, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College." (R. S. of Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of \$90,000 for the erection of a building and the purchase of lands for an experiment farm, and this College was permanently located at Columbia as a Department of the University, and the School of Mines and Metallurgy was located at Rolla, in Phelps county. The latter is under the same general control as the College of Agriculture and Mechanic Arts.

Endowment of the College:

The support of the College is derived from—

1. The proceeds of the sales of the public lands donated to Missouri by the act of Congress of July 2, 1862. This State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and thirty thousand nine hundred and three acres, yielding three hundred and fifty thousand dollars. This sum is invested in State certificates of indebtedness, at 5 per cent, and yields seventeen thousand five hundred dollars. Of this amount one-fourth is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The act of Congress of March 2, 1887, known as the "Hatch bill," which appropriates \$15,000 annually to the College of Agriculture for the maintenance of an Experiment Station. The object of this Station is to conduct experiments in various lines of work connected with agriculture. By the acts of Congress making the above appropriations, the expenditures are expressly restricted for the purpose of original scientific investigations in Agriculture.
3. The annual appropriations are yearly to be increased under act of Congress of August 30, 1890 (Morrill bill). The first appropriation of \$15,000, for the years 1889-90, is increased each year \$1,000, and this is to continue until it reaches \$25,000, which shall remain an annual appropriation. Of this amount, one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in agriculture and mechanic arts, and one-fourth of the remainder is by order of the Board of Curators given to the School of Mines and Metallurgy, at Rolla. The College Farm itself cost originally \$60,000.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and scientific investigation.

The College is divided into three schools, with a fourth department, the Experiment Station, as follows:

- A.—The School of Agriculture.
- B.—The Experiment Station.
- C.—The School of Mechanic Arts.
- D.—The School of Engineering.

A. SCHOOL OF AGRICULTURE.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of the Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D., LL. D.,
Professor of Agricultural Chemistry.

†**CHRISTIAN WILLIAM MARX, B. E.,**
Superintendent of Mechanic Arts.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Veterinary Science.

FREDERICK BLAKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

‡**T. E. WHITE, D. V. S.,**
State Veterinarian, and Lecturer on Veterinary Surgery.

||**WILLOUGHBY CORDELL TINDALL, A. M., M. S.,**
Professor of Mathematics.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

† Absent for first semester of 1897-8.

‡ In the service of the State Board of Agriculture.

|| Absent for session of 1897-8.

FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of Political Economy.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

†WALTER ALONZO THURSTON (First Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Assistant Professor (in charge) of Geology and Mineralogy.

WILLIAM OPHUELS, M. D.,

Professor of Bacteriology and Pathology.

ABRAHAM PERRY BUFFINGTON (First Lieutenant, U. S. Army),

Professor of Military Science and Tactics.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

THOMAS JACOB RODHOUSE, B. S.,

Instructor in Drawing.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

CHARLES THOM, A. B., M. A.,

Instructor in Botany.

‡A. E. HACKETT,

Lecturer on Climatology.

• ROYALL HILL SWITZLER,

Teaching Fellow in Mathematics.

†Appointment expired February 5, 1898.

‡In the service of the United States Government.

Requirements for Admission :

Applicants for admission to the Freshman class must be not less than sixteen years of age, and must have completed the "public school" course of the State. They must submit to the "Committee on Entrance by Diploma" satisfactory evidence of having completed this course; or in lieu of such evidence must pass satisfactory examinations in writing on each of the following subjects: English, Arithmetic, Geography (Descriptive and Political), and History of the United States. The examination will cover the ground embraced in the text-books adopted by the State for the common schools. As a part of the English examination, the applicant will be expected to write a composition of not less than two hundred words.

Applicants for admission to advanced classes must furthermore pass examinations in all the studies previously pursued by the class which they propose to enter. If they have pursued such studies in any of the High Schools of the State approved by the Faculty, or in any other institutions of similar rank, they may receive credit therefor upon presenting to the "Committee on Entrance by Diploma" a certificate from the proper officers of such institutions.

For the dates of examinations for admission, see the calendar, p. iii, and page 26. For board and other expenses, see pages 45-8.

COURSES OF INSTRUCTION.**I. A TWELVE WEEKS' WINTER COURSE IN AGRICULTURE AND DAIRYING.**

This course is designed to meet the wants of a large number of young men who cannot afford the time or the money necessary for a regular college course in agriculture, and yet desire a better preparation for their life work than can be acquired on the farm.

To suit the convenience of farmers the course is given in the winter. It is open to all over sixteen years of age, and no entrance examination or special preparation is required. Any intelligent person with a common school education will be able to pursue the course with profit. An entrance fee of \$5 covers all college expenses.

It is the aim to give the student the largest amount of thoroughly practical information about farming, dairying, gardening, fruit-growing, veterinary science, carpentry, and blacksmithing, possible in twelve weeks, and, at the same time, to instruct him in the elements of chemistry, geology, entomology, and botany as applied to agriculture and horticulture. The instruction is imparted by means of lectures, and practical illustrations on the farm, in the barn, in the greenhouse, the laboratories, and the machine shops of the College.

The course consists of 229 lectures and exercises, divided as follows:

Agriculture, 75; Horticulture, 40; Dairying, 20; Agricultural Chemistry, 30; Economic Entomology, 10; Veterinary Science, 24; Carpentry and Blacksmithing, ten exercises of two and one-half hours each; Book-keeping and Farm Accounts, six exercises of two and one-half hours each; Butter and Cheese-making, 14 exercises of two and one-half hours each.

II. SHORT WINTER COURSE IN HORTICULTURE.

With a view to aiding in the development of the Horticultural interests of the State by the dissemination of correct information concerning the best modern methods in the management of nurseries and orchards and in the growing of small fruits, flowers, and vegetables on a commercial scale, and by instruction in the application of the sciences underlying these arts, a short winter course in Horticulture, parallel with the short course in Agriculture, is offered. This course is open to all persons over sixteen years of age, and no entrance examination is required. An entrance fee of \$5 covers all college charges.

The course consists of 267 lectures and exercises, as follows: Horticulture, 108 (including Nursery Work, 24 lectures and 12 afternoons at practice in the nursery and grafting shops; Orchardling and Small Fruit Growing, 24 lectures and 12 afternoons in the orchards and vineyards; Market Gardening, 24 lectures and 12 afternoons spent in propagating vegetables, etc.); Landscape Gardening, 10 lectures; Fungous Diseases and Fungicides, 20 lectures; Entomology, 60 lectures; Botany, 16 lectures; Manures, 10 lectures; Drainage, 5 lectures; Sanitary Science, 10 lectures; Book-keeping, 6 exercises of two and one-half hours each; Carpentry and Blacksmithing, 18 exercises of two and one-half hours each; Steam Heating and Steam Fitting, 4 lectures.

The special lecturers in this course were Hon. N. F. Murray, President State Horticultural Society, Oregon, Mo., 24 lectures and 24 practical exercises on Nursery Work; Hon. L. A. Goodman, Secretary State Horticultural Society, Westport, Missouri, 24 lectures and 24 practical exercises on Orchardling and Small Fruit Growing.

These short winter courses, beginning Tuesday, January 3rd, 1899, will be continued daily, except Sunday, until March 27, 1899. Full details will be given in a special circular, which will be ready for distribution in October, 1898, and will be sent free to all applicants.

III. A TWO YEARS' COURSE.

The course embraces the first two years of the regular Four Years' Course, and aims to give the student the most comprehensive knowledge of the laws underlying the best modern practice in Agriculture, Horticulture, etc., as well as to develop the highest skill in Mechanical Drawing, Carpentry, and Blacksmithing, that is possible in the time.

In addition to the mental discipline afforded by a study of these useful arts and sciences, the student is instructed in English, Mathematics, etc., with a view to broadening his mind and better fitting him for his duties as a citizen.

It is the purpose of the course to educate the student back to the farm instead of away from it, and to give him such knowledge as will be most useful in the practice of his profession.

The requirements for admission are the same as for the Four Years' Course.

Students completing this course will be granted a certificate.

IV. A FOUR YEARS' COURSE.

This course, a continuation of the Two Years' Course, is more scientific, but not less practical.

It has been recast in order to adapt it as far as possible to present requirements in both science and practice. Its object is to give young men a thorough education at the same time that they are carefully instructed in the relations that the sciences bear to the various branches of agriculture; to give the mental training that is indispensable to success and to the discharge of the highest duties of citizenship; and also the scientific and technical training and knowledge requisite for becoming efficient workers in agricultural affairs, whether as practical farmers, teachers, or investigators. It aims to impart a thorough and comprehensive knowledge of the principles underlying the business of farming according to modern methods. Practice is combined with theory, whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations. Increased teaching force and equipment have been provided for the work, and the opportunities offered young men were never so satisfactory as at the present time.

Students completing this course will be entitled to a diploma, conferring upon them the degree of Bachelor of Agriculture (B. Agr.).

SCHEME OF STUDIES.

TWO-YEAR AND FOUR-YEAR COURSES.

First Year.

First semester.		Second semester.	
8:30.	Algebra and Geometry, T.W. Th. F. S..... 5	8:30.	Algebra and Geometry, T.W. Th. F. S..... 5
8:30.	*Commercial Course, M..... 1	8:30.	*Commercial Course, M..... 1
9:30.	Agriculture, T. Th. S..... 3	9:30.	Agriculture, T. Th. S..... 3
9:30.	English, M. W. F..... 3	9:30.	English, M. W. F..... 3
10:30-12:30.	*Shop work, T. Th. S... 3	10:30-12:30.	*Shop work, T. Th. S... 3
11:30.	Physics, M..... 1	11:30.	Physics, M..... 1
1:30.	*Drawing, M. W..... 2	1:30.	*Drawing, M. W..... 2
1:30.	*Laboratory, Physics, W.S.. 2	1:30.	*Laboratory, Physics, W. S. 2
4:00.	Military Science (optional)..	4:00.	Military Science (optional)..

Second Year.

First semester.		Second semester.	
8:30.	Agriculture, M. W..... 2	8:30.	Horticulture, M. W..... 2
9:30.	English, T. Th. S..... 3	8:30.	*Horticulture Laboratory, F. 1
10:30.	Algebra and Geometry, T.W. Th. F. S..... 5	8:30.	Animal Physiology, T.Th.S. 3
10:30.	*Stock judging, M..... 1	9:30.	Systematic Botany, T. Th. S. 3
11:30.	Chemistry, M. W..... 2	10:30.	Algebra, T. Th. S..... 3
1:30.	*Chemical Lab., T. W..... 2	10:30-12:30.	*Drawing, M. W..... 2
1:30.	*Shop work, M. S..... 2	11:30.	Chemistry, M. W..... 2
1:30.	*Drawing, Th. F..... 2	1:30.	*Shop work, M. F..... 2
4:00.	Military Science (optional)..	1:30.	*Chemical Lab., T. W..... 2
		4:00.	Military Science (optional)..

Third Year.

First semester.		Second semester.	
8:30.	Horticulture, T. Th. S..... 3	8:30.	Forestry, T. Th..... 2
8:30.	Veterinary Science, M. W. F. 3	8:30.	Veterinary Science, W. S.... 2
9:30.	Agricultural Chemistry, T. Th. S..... 3	9:30.	Agricultural Chemistry, T. Th. S..... 3
10:30.	Vegetable Physiology, T. Th. S..... 3	9:30.	Entomology, M. W. F..... 3
1:30.	*Laboratory, Physics, M. W. F..... 3	10:30.	Vegetable Physiology, T. Th. S..... 3
1:30.	*Veterinary Clinics, Th..... 1		Elective..... 5
	Elective 3		

Fourth Year.

First semester.		Second semester.	
8:30.	Agriculture, T. Th. S..... 3	8:30.	Agriculture, T. Th. S..... 3
8:30.	Climatology, M..... 1	9:30.	Landscape Gardening, M. W. 2
9:30.	Bacteriology, M. T. W. Th... 4	10:30.	Geology, T. W. F..... 3
11:30.	Economics, M. W. F..... 3	11:30.	Economics, M. W. F..... 3
	Elective 6		Elective..... 6

In the case of all the subjects starred [*] in the above table, no preparation is required, hence two and one-half times the number of hours given above in these subjects are spent in the Shop, in the Drawing and Commercial rooms, and in all Laboratory work.

Elective Work :

On reaching their third year, students in the School of Agriculture are required to elect one of the following groups of subjects: (a) Agriculture and Entomology; (b) Agriculture and Chemistry; (c) Botany and Entomology; (d) Horticulture and Botany; (e) Horticulture and Entomology; (f) Dairying and Chemistry; (g) Animal Husbandry and Veterinary Science; (h) English, French, or German. At least two hours each must be given to these electives during the four semesters of the third and fourth years, except when the heads of departments, by an exchange, arrange for the student to take all four hours of a subject in one semester. The student's other elective work may be chosen from the general list of electives offered in this College.

Thesis :

As a requisite for graduation, each candidate must present an acceptable thesis, based on the results of original research. The subject must be announced to the Dean with the approval of the head of the department within which it lies not later than the beginning of the second semester of the senior year. The completed thesis must be submitted not later than the second Saturday before Commencement day.

V. A TWO YEARS' GRADUATE COURSE.

This course is designed to give graduates of this College and of other Colleges of similar character such professional training as agriculturists, horticulturists, entomologists, or agricultural chemists, as will fit them to teach one of these subjects in Agricultural Colleges, or to work along one of these lines in Experiment Stations.

Students who complete this course, and present a creditable thesis evincing capacity for original research and power of independent thought, will receive the degree of Master of Agriculture (M. Agr.).

Agriculture.

Professor MUMFORD.

The instruction in this department is thoroughly practical, and is intended to give a knowledge of the application of the natural sciences to the complex operations of agriculture. Lectures and recitations are supplemented by practical demonstrations on the farm. In the class-room the student becomes familiar with the best rations, and in the barns feeds the rations, and determines their practical value. The student in dairying goes through the whole process of making butter, repeating the work until

he becomes familiar with it. The study of live stock is based upon an examination of a large number of animals, so that the student begins the subject with a knowledge of the best types for various purposes.

1a. The Soil. *First semester, T. Th. S., at 9:30. Professor MUMFORD.*

(First Year.)

A study of the origin, formation, distribution, and classification of soils with reference to their agricultural value; the conditions of fertility and the circumstances that influence it; indications of fertility; barren and exhausted soils; improvement of soils; physical properties of soils, including their relations to air, water and heat; capillarity, diffusion, and solution, as related to soil texture; farm drainage, including methods of construction, irrigation, tillage, plowing, subsolling, harrowing, etc.

1b. Principles of Manure and Manuring. *Second semester, T. Th. S., at 9:30.*

Professor MUMFORD.

(First Year.)

Constituents of Plants; sources and specific action of the various elements of plant food; crops and materials used as fertilizers; methods of farming in relation to the conservation of fertility.

Farm Crops.—Plant breeding; variation, selection, self and cross fertilization; practical methods for increasing the yield of crops; conditions of germination and plant growth; rotation of crops; planting, growing, harvesting and storing crops. The results of experiments at the Station are used in discussing the best methods of culture. The Missouri Experiment Station offers excellent opportunities for the illustration of this work.

2a. Animal Husbandry. *First semester, M. W., at 8:30; M., at 10:30. Pro-*

fessor MUMFORD.

(Second Year.)

This work begins with a careful study of the types of domestic animals. The score card is the basis in judging beef and dairy cattle, draft and light horses, mutton and wool sheep, swine and poultry. After the student has become familiar with the most approved types, he studies the principles and methods of successful breeding, heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading, influence of a previous impregnation, controlling sex, etc.

3a. Agricultural Engineering. *First semester, T. Th. S., at 8:30. Professor*

MUMFORD.

(Fourth Year.)

Construction of barns, stables and other shelters; plans for building silos, fences, etc. Road building is considered with special reference to country roads. Some attention is given to the mechanics of farm implements and machines. For this purpose a new self-registering dynamometer has been provided. There is also a model of a horse arranged for determining by experiments the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc.; and also an appliance for measuring the resistance to tractive force of incline and obstruction.

- 3b. Stock Feeding. *Second semester, T. Th. S., at 8:30.* Professor MUMFORD.
(Fourth Year.)

The laws of animal nutrition; composition of the animal body; fodders; the source of nutrients; digestion, resorption, circulation; respiration and excretion; formation of muscle, flesh, and fat; composition and digestibility as determining the value of feeding stuffs; their preparation and use; feeding for fat, for milk, for wool, for work, and for growth. A portion of the time is devoted to practicals, in which the student is required to compound rations and feed them, carefully recording results.

- 4b. Agriculture. *Second semester.* Dean WATERS. (Short Winter Course.)

Twenty-five lectures on manures and their application; on stock feeding; composition and digestibility of fodders; steaming, cooking and grinding foods; and feeding for growth, fat, milk, wool or labor. (See special circular of Short Winter Course.)

- 5b. Agriculture, *Second semester.* Professor MUMFORD.

(Short Winter Course.)

Sixty lectures on farm equipment; the properties and uses of construction materials; building barns, stables, shelters, silos, and other farm structures; farm crops, tillage rotation, cultivation, harvesting, and storing; breeds and breeding; stock judging; scoring animals to determine the best types for beef, milk, mutton, wool, etc. This work is all performed at the farm barns, and students acquire considerable proficiency in judging stock. (See special circular of Short Winter Course.)

- 6b. Dairying. *Second semester.* Mr. ———. (Short Winter Course.)

Selection, breeding, and feeding of dairy cows; modern methods of butter and cheese-making. Fifty hours of practical work in the dairy building are devoted to separating and testing milk, ripening cream, churning, working, salting, coloring, and packing butter for market. (See special circular of Short Winter Course.)

- 7a. Judging Live Stock. *First semester.* Professor MUMFORD. (Elective.)

Advanced work with the score card, and a study of breed characteristics. The college farm, well equipped with typical specimens of the leading breeds of live stock, offers excellent opportunities for this work.

- 8b. Soils. *Second semester.* Professor MUMFORD. (Elective.)

Laboratory work in Soil Physics, chiefly the Mechanical Analysis of soils. Offered only to Juniors and Seniors.

- 9b. Experiments in Agriculture. *Second semester.* Professor MUMFORD.

(Elective.)

The work consists of lectures on methods of Experiment Station work and critical studies of bulletins. The student is required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. He is also required to plan and conduct an original experiment, using the results obtained as the basis for a thesis.

106. **Dairying. Second semester. Professor MUMFORD. (Elective.)**

Breeding and improvement of the herd; management and equipment of the farm dairy. One-half of the student's time is devoted to practical work in the College dairy, which is fully equipped.

Courses 1a, 1b, and 2a are required for the certificate in Agriculture.

Courses 1a, 1b, 2a, 3a, and 3b are required for B. Agr.

Courses 4b, 5b, and 6b are required for students in Short Winter Course.

Facilities for Instruction:

Libraries.—The Agricultural Library contains more than 600 bound volumes and 5,000 pamphlets. One of the most valuable features of this library is a complete file of the publications of every Experiment Station in the United States, systematically arranged, and fully indexed. Files of the leading agricultural papers are accessible in the reading room. The general library of the University contains many volumes of great interest to students in agriculture.

The Agricultural Museum.—The value of a museum is mainly in furnishing illustrative material for study, and to this purpose the Agricultural Museum is well adapted. It contains a collection of wool fibers illustrating the influence of breeding and environment; a large assortment of cotton fibers and of fiber plants from various countries; and a systematic collection of the agricultural grasses of the United States. The forest woods of the State are represented by block specimens showing cross and transverse sections and bark characteristics, and by a collection of polished boards. Several hundred models of early patents of farm machines occupy a considerable portion of the museum. In live-stock there are skeletons of a horse, and hog, and two stuffed specimens of the wild white cattle of Great Britain.

The Farm.—The farm is fully equipped with improved agricultural machinery, a dairy building, hay and stock scales, a silo, sheep, cattle and horse barns, and model swine pens. The farm and its equipment is used primarily for the instruction of students.

The Live Stock.—For the instruction of students in animal husbandry, the farm maintains typical specimens of the leading breeds of live stock. Among the breeds of cattle are a fine herd of Jerseys, and excellent specimens of Short-horns, Aberdeen Angus, and Herefords. A herd of grade steers are fatted each season. There are specimens of the leading breeds of sheep, swine, and poultry, together with grade animals.

The Dairy.—The College has equipped a dairy with several Babcock milk testers, aerators, improved milk and cream vats, various styles of separators, churns and butter workers, and with a complete sterilizing outfit for pasteurizing milk and cream on a large scale.

The Experiment Station Field.—The field experiments of the Missouri Experiment Station offer exceptional opportunities for the study of comparative methods of cultivating and growing farm crops.

Horticulture.

Professor WHITTEN.

The following courses are offered:

- 1b. Horticultural methods. Lectures. *Second semester, M. W., at 8:30; F., at 1:30.* Professor WHITTEN. (Second Year.)

The work consists of lectures, supplemented by required readings and practical exercises. The propagation, transplanting, cultivation, pruning, gathering, and marketing of fruits and vegetables, are the principal topics discussed. When necessary, the lectures are given in the field, the green-houses, or the propagating rooms, in order that they may be illustrated by practical object lessons. Each student is required to make cuttings and grafts, prepare composts, sow seeds, transplant, prune, etc., performing as many of the various horticultural operations as the time will permit.

- 2a. Science of Horticulture. Lectures. *First semester, T. Th. S., at 8:30.* Professor WHITTEN. (Third Year.)

Principles underlying the various horticultural operations; plant growth and behavior of plants under culture; variation, selection, and crossing with reference to plant breeding. In this course the aim is to acquaint the student with the reasons for the various horticultural operations—how and under what conditions seeds germinate, cuttings take root, grafts unite, and wounds heal; what environments cause variation in plants; how our cultivated plants are brought to perfection from their wild types; and how and why cultivation affects plants.

- 3b. Forestry. Lectures. *Second semester, T. Th., at 8:30.* Professor WHITTEN. (Third Year.)

In this course are considered the influence of forestry on climate, soil, and flow of streams; the management of forests; the characteristics and uses of typical woods; the specific characters of our principal forest trees in their winter condition; and something of the first geography of the country.

- 4b. Landscape Gardening. Lectures. *Second semester, M. W., at 9:30.* Professor WHITTEN. (Fourth Year.)

The laying out and planting of ornamental grounds, the making of roads, lawns, flower and shrubbery borders, the consideration of trees, shrubs, and flowering plants, are the principal topics of this course.

5. General Horticulture. (Twelve Weeks' Winter Course in Agriculture.) Forty Lectures. Professor WHITTEN.

Construction and management of hotbeds and cold frames; propagation of plants, including germination of seeds, making cuttings, budding, grafting and layering; pruning and cultivating orchards and small fruits, and spraying for insects and fungous diseases; originating and improving varieties of fruits and vegetables by cross-fertilization, selection and cultivation. (See circular of Short Winter Courses.)

6. **Nursery Work.** Through January, in Winter School of Horticulture. Lectures and Laboratory. By a practical nurseryman.

Twenty-four lectures on Practical Nursery Work, embracing grafting, budding, packing for storage or shipment, growing and grading nursery stock, etc. In addition to the lectures, twelve afternoons will be devoted to the actual work of grafting, budding, grading, packing, etc.

7. **Orchards and Small Fruits.** Through February, in Winter School of Horticulture. Lectures and practical exercises. By a practical orchardist.

Twenty-four lectures, treating of soils and localities adapted to fruit; varieties; time and manner of planting; pruning; cultivation and general treatment; harvesting and marketing fruits. Twelve afternoons will be devoted to practical work in laying out, planting and pruning orchards; and to grading and barreling apples.

8. **Market Gardening, and Hotbed Forcing.** Through March, in Winter School of Horticulture. Lectures and practical exercises. By a practical market gardener.

Twenty-four lectures, treating of the planting, growing, and marketing of the ordinary garden crops, such as cucumbers, mushrooms, radishes, lettuce, parsley, onions, etc.; hotbed construction; mixing soils, planting, transplanting and watering, bunching, marketing, and hotbed methods. In addition to these lectures, twelve afternoons will be devoted to practical work in growing tomatoes, asparagus, pieplant, lettuce, radishes, etc.

9. **Floriculture, Landscape Gardening, Fungous Diseases and Fungicides.** In Winter School of Horticulture. Lectures. Professor WHITTEN.

Floriculture.—Ten lectures and four practical exercises in the propagation and culture of flowers, including the making of cuttings, the mixing of soils, potting, watering, managing temperatures, germination of seeds, marketing cut flowers, etc.

Landscape Gardening.—Ten lectures on the laying out and planting of grounds, the making of drives and walks, the planting, pruning and management of trees, shrubs, and flowers.

Fungous Diseases and Fungicides.—Twenty lectures, setting forth the nature of the destructive diseases of orchard trees, small fruits, and other plants. The cause of the various rots, blights, rusts, mildews, scabs, and other fungous diseases which prevail in our State will be described, and specimens of diseased fruits and plants will be shown as object lessons, in the class room, so that the students will be able to recognize them. The nature of the attacks of these diseases upon plants, and how they spread from tree to tree and orchard to orchard, will be made plain. The best means of checking their attacks by sanitary methods and by spraying will be discussed and ample practice will be given in mixing, testing, and applying spraying solutions.

- 10a. Horticulture Laboratory. *First semester, M. W. F., at 8:30.* Professor WHITTEN. (Fourth Year Elective.)

The preceding courses are required. This course provides for carrying on independent lines of investigation—variety study of fruits or vegetables on the grounds; propagation of plants under various conditions of heat, moisture, sunlight, etc., in the greenhouse and in hotbeds; seed testing and the treatment of refractory seeds.

Facilities for Instruction:

The Horticultural grounds include 32 acres, containing a well-planted lawn with shrubbery and flower borders, collections of various kinds of small fruits and grapes, and representative varieties of stone fruits, apples, and pears. Over 900 varieties of orchard fruits are now growing on the grounds. Nut trees from selected stock are being put out, and our native wild fruits are being collected and planted. Many kinds of vegetables are grown every year. A class-room, an herbarium and seed-room, a photographic room, and a library have been equipped in a substantial brick building on the Horticultural grounds. A greenhouse, one of the finest in the State, has just been erected for practical work in Horticulture. This, together with a commodious propagating house and a range of hotbeds, affords ample opportunity for teaching methods of propagating and forcing plants. The department has a Horticultural herbarium of moderate size. The experiment orchards, vineyards, vegetable plots, and nurseries afford excellent facilities for instruction in horticulture. The department has a file nearly complete of the Experiment Station literature of the country, the Experiment Station card-index to this literature, the reports and proceedings of various State horticultural societies, and the leading horticultural journals. The Horticultural library has been increased to more than six times its former size, and it now contains many valuable cultural and scientific treatises, which afford good opportunity for research in practical methods and in the sciences that underlie them. These works are systematically arranged, and are being indexed. The Experiment Station literature is systematically arranged in chronological order, in convenient filing cases. The department has also received about 700 jars of preserved fruits and vegetables exhibited at the World's Fair at Chicago, and has a good collection of seeds and of horticultural products.

Entomology.

Professor STEDMAN.

The instruction in Entomology is given by lectures supplemented by laboratory and field work. As far as practicable the student collects and studies his own specimens. The collecting is done systematically in the fall while the insects are still alive; later, the field work is entirely re-

placed by laboratory work. The collecting includes the work done by insects, as well as their eggs, larvæ, pupæ, and adults, while their habits and economy receive due attention. The lectures cover the external and internal anatomy, life histories, habits, economy, and classification of insects; the characteristics of the orders, sub-orders, and principal families, with special emphasis upon those of economic importance, and the best methods of combatting their ravages. The laboratory work embraces the study, by means of actual specimens, of the internal and external anatomy, life histories, habits, economy, breeding, identification, or determination of genera and species, and the classification of those insects found in our fauna; and also economic work and original investigation for advanced students.

The following courses are offered :

- 1b. General Entomology. (1) Lectures. Internal and external anatomy, life histories, habits, economy, characteristics, classification, methods of destruction, machines and insecticides, Apiculture. *Second semester, W. F., at 9:30.* (2) Laboratory work, collecting, preserving, breeding, methods, habits, life histories, work, external anatomy, identification or determination of orders, families and genera, classification. *Second semester, M., at 1:30.* (Third Year.)
2. Economic Entomology. (For students in the Short Winter Course.)
See special catalogue, to be issued in October, 1898.
3. Advanced Entomology. Lectures and Laboratory work. Internal anatomy, histology, physiology, embryology, breeding, life histories, habits, economy, distribution, dimorphism, mimicry, determination of species, classification. *First and second semesters at hours to be appointed.* (Fourth Year Elective.)
Must be preceded by Course 1b.
4. Graduate work in Entomology. Laboratory work. Monographing a group (scientific); monographing a species (economic). *Both semesters, at hours to be appointed.*

Must be preceded by Course 3.

All courses in Entomology are elective for Academic and other students. Agricultural students may elect course 3 in the Senior year, and course 4 in the Graduate years.

Facilities for Instruction and Research:

The Entomological department occupies the second floor of the Horticultural building. The laboratory contains an Entomological Cabinet illustrating the habits, work, and life histories of the more important injurious and beneficial insects; and several thousand species of adult insects from all orders, correctly classified and labeled, accessible to the student for reference and comparison, and valuable for illustrating the lectures. The

laboratory is supplied with compound microscopes, dissecting instruments, glassware, a large microtome, a paraffine bath, a hot oven, large and small breeding cages and jars, aquaria, spraying machines of various kinds, insecticides, and reagents. The department receives twelve current periodicals on the subject of Entomology. These, kept in the laboratory in connection with the department library, are accessible to the students at all times.

Agricultural Chemistry.

Professor SCHWEITZER.

1a. Agricultural Chemistry. *First semester, T. Th. S., at 9:30.* (Third Year.)

General introduction; functions of the plant, including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell, an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membranous diffusion; assimilation; conditions of vegetation.

1b. Agricultural Chemistry. *Second semester, T. Th. S., at 9:30.* (Third Year.)

Soil—its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat, and moisture. Soil physics in general. Manures, natural and artificial—their composition, application, value. Theory of rotation of crops; extensive and intensive cultivation; industrial agriculture in general. Farm sanitation; air, respiration, vitiated air and ventilation, infection, contagion, germ theory of disease. Water—potable water, hard and soft; impurities in it, and their effects upon health and life. Food—composition and general properties; preservation of food; and food adulterations.

Veterinary Science.

Drs. CONNAWAY, WHITE, and OPHELS.

1b. The Anatomy, Physiology and Hygiene of domesticated animals.

Second semester, T. Th. S., at 8:30. Professor CONNAWAY.

(Second Year.)

This course is given by lectures and laboratory work, the latter consisting of the complete dissection of one or more animals, and a comparative study of such organs as show variations in the different species. Charts, models, and prepared specimens will also be available for illustrating this study. Practical demonstrations will be given in the Physiological laboratory of the more important functions of the animal body. The study of food stuffs and the action of the digestive fluids will receive special attention.

2a. Veterinary Medicine and Surgery. *First semester, M. W. P., at 8:30.***Professor CONNAWAY.****(Third Year.)**

The first half of the semester is devoted to the study of those diseases that affect the internal organs, such as the lungs, stomach, intestines, urinary organs, etc.; the second half of the semester is given to the study of the diseases and conditions that require surgical treatment, such as lameness, wounds, abscesses, tumors, etc. A clinic is held one afternoon of each week for the treatment of the diseases discussed in the classroom. In proper season instruction is given in castration, spraying, and caponizing.

3b. Contagious and Infectious Diseases, and Quarantine regulations. *Second semester. Dr. WHITE.***(Third Year.)**

A series of lectures by Dr. T. E. White, State Veterinarian, on Glanders, Anthrax, Black leg, Tuberculosis, *maladie du coit*, Texas fever, etc., and the means by which these diseases are controlled.

4a. Bacteriology. Lectures 2 hours a week, laboratory 2 hours a week.***First semester, four hours a week.*****(Fourth Year.)**

The lectures will introduce the students to general questions in Bacteriology: the nature and development of bacteria, the history of Bacteriology, sterilization and disinfection, immunity and disposition. In the laboratory they will be instructed in the preparation of culture media and in the methods of obtaining pure cultures. They will study some saprophytic and the most important pathogenic bacteria, which cause infectious diseases in animals, especially in domesticated animals, in pure cultures on the different culture media and in microscopic preparations. Text-book: Abbott's Principles of Bacteriology.

Mechanic Arts.

Professor MARX; Mr. RODHOUSE; Mr. MASON.**The following courses are offered:****1. Wood-working and Pattern-making. *M. W. P., at 10:30-12:30.*****(First Year.)**

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern making.

2. Forging. *First semester, M. S., at 1:30; Second semester, M. P., at 1:30.***(Second Year.)**

These courses are expected to give the student not only a knowledge of the methods of the blacksmith, but also manual skill in the handling of tools.

3. **Machine-work (For Junior Engineering). M. W. F., at 1:30.**

The instruction in the machine-shop is carried on in substantially the same manner as in the wood-work. The course begins with a series of graded exercises, which give the student familiarity with the tools of the craft, and with the operations for which they are particularly designed, and ends with practice in the construction of parts of machinery, and, time permitting, in the building of complete machines.

Courses 1 and 2 are for students in the Schools of Agriculture and Mechanic Arts, and for Engineers. Course 3 is for Engineers only.

For statement and description of facilities of instruction, see announcement of the School of Mechanic Arts, pages 150-155.

Drawing.

Mr. RODHOUSE, Instructor.

Three courses are offered: 1, for Students in the Normal Department; 2, for Students in the College of Agriculture and Mechanic Arts; 3, for Students in Engineering.

1. **Normal Drawing.** The object of this course is to show what kind of drawing should be taught in our district schools, and how to teach it. The National Drawing System and text-books have been adopted for this course. Students that have done good work elsewhere in this system will be given credit for it.

2. **Agricultural Drawing.** The course is arranged to be of practical value to the farmer in designing buildings, machinery, and in planning repairs on the farm.

3. **Engineering Drawing.** This course is complete. It is expected that the student will be a thorough draughtsman when he has finished it. Briefly, it consists of geometrical projections, round writing, lettering, free-hand drawing, problems in descriptive geometry, elements of machine drawing, colored and pen topography, tracing, blue-printing, and brush shading.

Desks and lockers are provided by the University; all instruments, materials, supplies, etc., are to be furnished by the student.

Commercial Studies.

Miss PORTER.

The work in this course does not cover that provided in a full Business College Course, but is designed for those who wish to record the ordinary business transactions of every-day life in a business-like and systematic manner.

To this end instruction is given in correspondence, making out bills and statements, writing receipts, cheques, notes, and drafts, together with the use of the various account books. An important part of the work is a thorough drill in journalizing, concluding with the writing of entire sets of books, that the student may make a practical application of his previous work in the various business forms.

This work is required in both semesters of the First Year.

Stenography.—A full course in stenography is provided for those students who wish to carry on this study while prosecuting regular work in the University.

Three hours of class room work, supplemented by at least the same time of preparation, are required. The first semester is devoted to thorough drill in the principles of the system adopted, and the second semester to an application of these principles to reading and dictation exercises. These exercises include correspondence, addresses and court-reporting. At the end of the year it is expected that the student will have attained a speed of from sixty-five to ninety words a minute, according to his application to the work. During the first year more attention is given to accuracy in writing and *reading*, than to practice for speed.

Those wishing to make the study valuable should continue dictation exercises during the second year.

Military Science.

Lieut. BUFFINGTON.

An officer of the regular army is detailed by the War Department as Professor of Military Science and Tactics, to carry out the provisions of the act of Congress of 1862, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

Students taking this instruction are required to conform to the special rules and regulations prescribed for the Military department. These requirements are so adjusted as to harmonize with the regular class-work.

The instruction offered in this Department is open to all students of the University. Military drill is given at least three times a week, from 4 to 5 o'clock. Each Senator and Representative of the General Assembly of Missouri is authorized by law to appoint two cadets from his district. Such cadets are matriculated in the Academic and Agricultural departments (including Engineering) free of tuition and other fees, except laboratory deposits. For information about cadetships, uniforms, cadet band, equipment in artillery and small arms, see announcement of the Department of Military Science and Tactics, pages 117-121.

English.

Assistant Professors PENN and BELDEN.

The courses in English embrace the study of language, composition, and literature, arranged as follows:

- 1a. Essentials of English. The Grammar of English, with readings and exercises. Shakspeare's "Tempest," or some like classic, will be used in the class-room. *First semester, M. W. F., at 9:30.* (First Year.)
- 1b. Essentials of English. Analysis, Word Formation, and Composition, with readings in some masterpiece, exercises, and weekly compositions. *Second semester, M. W. F., at 9:30.* (First Year.)

Longman's English Grammar (revised) and Keeler and Davies' Studies in English Composition, will be the text-books and basis for the work in courses 1a and 1b.

- 2a. Composition and Literature. Readings, class-room interpretation, accompanied by constant essay work. *First semester, T. Th. S., at 9:30.* (Second Year.)

The masterpieces announced for the English entrance examination of the following session will, so far as convenient, constitute the work. See pages 23-24.

Political Economy.

Professor HICKS.

The following courses are required:

- 1a. Theory of Economics. *First semester, M. W. F., at 11:30.* (Fourth Year.)
- 2b. Theory of Finance. *Second semester, M. W. F., at 11:30.* (Fourth Year.)

Course 2b must be preceded by 1a.

Mathematics.

Mr. SWITZLER.

The following courses are required:

1. Elementary Algebra. *T. Th. S., at 8:30.* (First Year.)
Text: Hall & Knight's Elementary Algebra (revised by Sevenoak).
2. Plane Geometry. *W. F., at 8:30.* (First Year.)
Text: Phillips and Fisher's Plane Geometry.
- 3a. Elementary Algebra. *First semester, T. Th. S., at 10:30.* (Second Year.)
Text: Same as in course 1.

- 4a. Plane Geometry. *First semester, W. F., at 10:30.* (Second Year.)

Text: Same as in course 2.

- 5b. Algebra. *Second semester, T. Th. S., at 10:30.* (Second Year.)

Candidates for admission to any of these courses must pass a satisfactory examination on Arithmetic, unless they show good grades therein.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

The following courses are required:

- 1a. Elementary Physics. *First semester: Lecture, M., at 11:30; Laboratory, W. S., at 1:30.* (First Year.)
- 2b. Elementary Physics, and Laboratory. *Second semester: Lecture, M., at 11:30; Laboratory, W. S., at 1:30.* (First Year.)
- 3a. Advanced Physics. *First semester, M. W. F., at 1:30.* (Third Year.)

For further information, see Physics, in Academic department, page 87.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. MOORE.

The following course is required:

1. Inorganic Chemistry. *First and second semesters: Lectures, M. W., at 11:30; Laboratory, T. W., at 1:30.* Professor BROWN, and Mr. MOORE. (Second Year.)

For elective courses, see Chemistry, page 89.

Botany.

Professor AYERS; Mr. THOM.

1. General Biology. Lectures and Laboratory. *Both semesters, three times a week.*

The course includes a study of both plant and animal forms. It is designed to give the student a comprehensive idea of the nature of organic beings with sufficient knowledge of the forms of animal and plant life to enable him to work intelligently in either field.

2. Structural Botany of Phanerogams. Lectures and Laboratory. *Three times a week.* (Elective.)
3. Systematic Botany. Class and field work on local flora. *Second semester, three times a week.* (Second year.)

Geology.

Assistant Professor MARBUT.

The following course is required:

- 4b. Economic Geology. *Second semester, T. W. F., at 10:30.* (Fourth Year.)

This course deals with subjects from their economic aspect, such as water supply, mineral springs, fertilizers, the origin and relation of soils to the underlying rock structure, clays, cement, etc. Text-book: Tarr's Economic Geology.

Climatology.

Mr. HACKETT.

- 1a. Climatology. *First semester, M., at 8:30.* (Fourth Year.)

This course covers Elementary Meteorology; the laws of storms; weather forecasts, how made, and distributed, and the advantages to be derived from them; frosts, how they may be anticipated, and what measures may be taken to prevent damage therefrom; weather charts and their uses; the climate of Missouri; local climatic peculiarities, and their effects upon certain crops.

B. THE AGRICULTURAL EXPERIMENT STATION.

This station was established by the act of Congress of 1887, and by the acts of the General Assembly of Missouri accepting its provisions. By order of the Board of Curators of the University of the State of Missouri it is made a Department of the College of Agriculture.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations:

"Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each state or territory, established, or which may hereafter be established, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled 'An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts,' or any of the supplements to said act, a department to be known and designated as an 'Agricultural Experiment Station.'

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories.

SEC. 3. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe."

It will be noted that the act of Congress of 1862 was designed to promote *Agricultural education*, while that of 1887 provides for *Agricultural investigation*.

The Station uses such parts of the College farm and equipment as are needed for experiments.

The results of experiments are given to the public in a series of bulletins, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and from 1 to 40 of the Station series, since its organization in 1888.

During the year four Bulletins and an Annual Report were published, aggregating 122 pages, reporting the results of careful scientific experiments with insects injurious to fruit, Texas fever, the effect of the width of the tire on the draft of wagons, and sugar beets.

Thirteen thousand copies of each were distributed free to the newspapers of the State and to the agricultural press, the libraries of colleges and high schools in Missouri, and to the leading farmers of this and adjoining States. In addition to the regular Bulletins of the Experiment Station, numerous Circulars of Information and Special Newspaper Bulletins have been published.

The experimental work has been greatly expanded and made more exact and scientific, its practical and economic phases being kept constantly in view.

In agriculture, investigations are now under way covering questions of maintenance of soil fertility; the renovation of worn-out soils; the most efficacious rotation of crops; green manure crops, forage crops, varieties of grains, grasses, potatoes, etc.; best methods of tillage for corn; effect of subsoiling and tile drainage; feeding experiments designed to ascertain the cheapest foods for pork and beef productions, and the cheapest method of wintering cattle.

In Horticulture about 500 named varieties of apples, 130 of plums, 140 of grapes, 28 of peaches, 10 of pears, 160 of strawberries and other fruits, are growing and being tested upon the Horticultural grounds. In addition, several hundred varieties of seedling strawberries, one-half of them the result of careful cross-breeding of known parents, have been originated and are giving promise of good results on the grounds. During the past year, seeds of hand-pollinated peaches and plums, and selected seeds and plants of promising types of native nuts, persimmons, papaws, and other wild fruits have been planted. A collection of figs, Japanese persimmons, and other foreign fruits and nuts, has been secured. The work of plant breeding will be continued with a view of obtaining varieties better adapted to our climatic conditions. The leading varieties of vegetables are tested as they come on the market.

Experiments in spraying with various mixtures for fungous diseases are carried on in a number of private orchards as well as on the Horticultural grounds. Experiments in pruning and grafting are in progress in the new orchards and in the vineyard. The various orchard trees and vines are observed for their pollinating characteristics and to see whether self or cross fertilization occurs in each variety. Methods of protecting tender buds are being tried. An experiment in breeding tomatoes is in progress.

The Entomological department is conducting extensive experiments in the best methods of suppressing insects injurious to farm, garden and orchard crops.

Extensive experiments with Texas fever have been carried on by the Station in co-operation with the Missouri State Board of Agriculture and the Texas Experiment Station.

A careful study of the composition and food value of the principal kinds of animal and vegetable fats is being made by the Chemical department of the Station.

For further information concerning the College of Agriculture or the Experiment Station, address

H. J. WATERS,
Dean and Director,
Columbia, Mo.

OFFICERS OF THE EXPERIMENT STATION.**BOARD OF CONTROL:****The Curators of the University of the State of Missouri.****ADVISORY COUNCIL:****The Missouri State Board of Agriculture.****OFFICERS OF THE STATION.**

THE PRESIDENT OF THE UNIVERSITY.....	
H. J. WATERS, B. A. S.....	Director
PAUL SCHWEITZER, Ph. D.....	Chemist
J. C. WHITTEN, B. S.....	Horticulturist
J. M. STEDMAN, B. S.....	Entomologist
J. W. CONNAWAY, M. D. C.....	Veterinarian
†D. W. May, M. Agr.....	Assistant in Agriculture
N. O. BOOTH, B. Agr.....	Assistant in Horticulture
C. THOM, A. B., M. A.....	Assistant in Botany
T. I. MAIRS, B. Agr.....	Assistant in Agriculture
†A. E. HACKETT.....	Section Director Missouri Weather Service
W. B. CADY, B. S.....	Assistant in Chemistry
IRVIN SWITZLER.....	Secretary
R. B. PRICE.....	Treasurer
C. L. WILLOUGHBY.....	Clerk and Stenographer

†Absent after November 1st.

†In the service of the U. S. Government.

C. SCHOOL OF MECHANIC ARTS.**FACULTY.**

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of the Faculty.

†**CHRISTIAN WILLIAM MARX, B. E.,**
Superintendent of Mechanic Arts.

†**WILLOUGHBY CORDELL TINDALL, A. M., M. S.,**
Professor of Mathematics.

†Absent for the first semester of 1897-1898.

†Absent for the session of 1897-1898.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History.

LUTHER MARION DEFOE, A. B.,
Acting Professor of Mathematics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

†WALTER ALONZO THURSTON (First Lieutenant U. S. Army),
Professor of Military Science and Tactics.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

NORMAN COLMAN RIGGS, M. S.,
Acting Assistant Professor of Mathematics.

ABRAHAM PERRY BUFFINGTON (First Lieutenant, U. S. Army),
Professor of Military Science and Tactics.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

†Appointment expired Feb. 5, 1898.

- RICHARD B. MOORE, B. S.,**
Instructor in Chemistry.
- THOMAS JACOB RODHOUSE, B. S.,**
Instructor in Drawing.
- INEZ L. RIGGS, M. L.,**
Teaching Fellow in Germanic Languages.
- HUGH ALLISON SMITH, B. L.,**
Teaching Fellow in Romance Languages.
- ROYALL HILL SWITZLER,**
Teaching Fellow in Mathematics.

COURSE IN MECHANIC ARTS.

The object of this course is to educate the mental and physical powers of the student simultaneously—to train the mind to the hand and the hand to the mind. The instruction is intended to develop the power of observing phenomena which occur about us daily, and to cultivate skill of hand and eye.

The course is sufficiently broad to enable the student at its completion to continue work in the University. After the completion of this course, any of the Engineering courses can be completed in three years more.

The entrance requirements for this course are the same as for the Agricultural course. (See page 129).

SCHEME OF STUDIES.

First Year.

First semester.		Second semester.	
Algebra and Geometry.....	5	Algebra and Geometry.....	5
English.....	3	English.....	3
Book-keeping.....	3	Book-keeping.....	3
Elementary Physics.....	3	Elementary Physics.....	3
Shop, carpentry and joinery.....	3	Shop, carpentry and joinery.....	3
Drawing.....	2	Drawing.....	2

Second Year.

First semester.		Second semester.	
Algebra and Geometry.....	5	Algebra and Geometry.....	5
English.....	3	English.....	3
Chemistry.....	4	Chemistry.....	4
Physics.....	3	Physics.....	3
Shop, forging.....	2	Shop, forging.....	2
Drawing.....	2	Drawing.....	2

Third Year.

First semester.		Second semester.	
Mathematics.....	2	Mathematics.....	2
English.....	3	English.....	3
Chemistry.....	3	Chemistry.....	3
Physics.....	3	Physics.....	3
French, German, Spanish.....	3	French, German, Spanish.....	3
Drawing.....	2	Drawing.....	2
Shop, machine.....	3	Shop, machine.....	3

Fourth Year.

First semester.		Second semester.	
Mathematics.....	3	Mathematics.....	3
English.....	3	English.....	2
Elem. Applied Mechanics.....	3	Elem. Applied Mechanics.....	3
French, German, Spanish.....	3	French, German, Spanish.....	3
Drawing.....	2	Drawing.....	2
Shop, pattern making.....	2	Shop, pattern making.....	2
History.....	3	History.....	3

(For description of Shopwork, see page 142.)

Facilities for Instruction:

The building for Mechanic Arts, 108×117 feet, has two stories and a basement. It contains six work-shops 40×40 feet, an exhibit hall 25×40, two offices 16×18, one drawing-room 40×40, two class-rooms 18×22, besides store-rooms, an engine-room, lavatories, etc. The machinery is driven by a 60-horse power Corliss engine.

Four hundred students in classes of 24, each class occupying two hours and a half a day, can easily be taught. The carpenter and pattern shop has accommodations for four classes of 24 students each. Each student has for his exclusive use a lock-drawer and a set of tools, for the care and safety of which he is held responsible.

There are 25 speed lathes for wood turning, 25 sets of bench tools, 96 sets of edge tools, and as many lock-drawers.

The blacksmith-shop is equipped with 25 forges, 25 anvils, and 25 sets of forge tools.

The machine-shop is equipped with three screw-cutting engine lathes 14" swing, 8' bed; one screw-cutting engine lathe 18" swing, 8' bed; one polishing lathe 12" swing, 6' bed; one 26×26 Gray planer; one 18" crank-shaper; one pipe-cutting and threading machine; one wet and dry emery grinder and surfacer; one 24" drill-press; and with tool-room and ample bench outfit.

The blast for the forges is supplied by a power blower. A 48" exhaust fan keeps the shops cool and free from smoke and gases, even when all the fires are going in the forges.

Two large shops, each 40×45 feet, are as yet unfurnished, but will be equipped with benches and speed lathes, or moulding outfit, to suit the demands of the future.

The whole building is lighted by a 360-lamp dynamo, situated in the engine-room.

The teaching is oral. The instructor at the bench, machine, or anvil fully explains the principles to be used, and all work involving new principles is executed in the presence of the whole class. Free use is made of drawings and the black-board.

When every step has been explained, the class proceeds to the execution of the work, while the instructor superintends and gives help to such as need it.

A series of 25 or 30 graduated exercises is given in each shop. All the work is disciplinary. Special trades are not taught, nor are articles manufactured for sale. The value lies in the educational result of each exercise, in training the mind and hand to act simultaneously—the hand at the will of the mind.

The course in Mechanic Arts offers a great opportunity to teachers who wish to prepare themselves to give instruction in Manual Training and Drawing in the High Schools and the district schools of Missouri. St. Louis and Kansas City have taken steps to introduce Manual Training and Drawing in the district schools. Similar movements have been made at Moberly, Carthage, and other cities. Within a few years there will be probably not a district school in any town of five thousand inhabitants in Missouri in which Manual Training and Drawing will not be taught regularly. The State University is the only institution in Missouri at which teachers can find instruction in Pedagogy and at the same time in Manual Training and Drawing. Our shops have cost us, including the building, and the equipment, more than \$50,000. The entire building—a large one—is devoted to drawing and shop work. Three men give instruction regularly in these subjects. The work in the shops requires skill rather than strength. It can be done by women as well as by men. A number of women have taken it with eminent success.

Other Courses :

The School of Mechanic Arts offers several elementary courses to students in the School of Agriculture, which are announced on page 142. A four years' course is outlined in Mechanical Engineering (see page 162), which leads to a professional degree.

For information as to tuition fees and other expenses, see pages 45-6.

D. SCHOOL OF ENGINEERING.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President.

HENRY JACKSON WATERS, B. A. S.,

Dean of the Faculty.

†**CHRISTIAN WILLIAM MARX, B. E.,**

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

‡**HARRY THOMAS CORY, M. M. E., M. C. E.,**

Professor of Civil Engineering.

HOWARD BURTON SHAW, B. O. E., A. M.,

Assistant Professor of Electrical Engineering.

||**WILLOUGHBY CORDELL TINDALL, A. M., M. S.,**

Professor of Mathematics.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, and Assistant Professor of Mathematics.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology.

JOHN PICKARD, A. M., Ph. D.,

Lecturer on Ancient Architecture.

LUTHER MARION DEFOE, A. B.,

Acting Professor of Mathematics.

†Absent for the first semester, 1897-98.

‡Absent for second semester of 1897-98.

||Absent for the session of 1897-98.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Assistant Professor (in charge) of Geology and Mineralogy.

WILLIAM OPHUELS, M. D.,
Professor of Bacteriology.

NORMAN C. RIGGS, M. S.,
Acting Assistant Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

INEZ L. RIGGS, M. L.,
Teaching Fellow in Germanic Languages.

HUGH ALLISON SMITH, B. L.,
Teaching Fellow in Romance Languages.

Requirements for Admission :

The following are the requirements for admission to the Freshman Class for the session of 1898-99:

1. French or German—two years' work.

The two years' work in German means the ability to read at sight ordinary German prose, and to translate simple English sentences into Ger-

man, and includes a correct pronunciation of the language. Two years' work in French means a like ability in French. For the present the University provides instruction for such students as have not had the two years of French or German required for entrance, and are therefore conditioned thereon.

2. English. Same as for the B. S. courses in the Academic department. See page 23.

3. Mathematics. Algebra and Plane Geometry. The equivalent of Milne's High School Algebra, and of Phillips and Fisher's Plane Geometry, is required.

4. Science. One year's work each, with laboratory practice, in any two of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. History. Same as for the Academic department, B. L. Course, page 24.

A student must pass on at least ten units (see page 25). On the other two he may be conditioned; but no student deficient in Mathematics will be allowed to enter the Engineering department.

Courses and Degrees :

The five courses offered below lead respectively to the degrees of Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, Bachelor of Science in Sanitary Engineering, and Bachelor of Science in Architecture. A special course of one year in Civil Engineering for surveyors leads to a Certificate.

During the vacation following the Junior year, Engineering students are required to visit, and to write a report, with necessary drawings, of some engineering enterprise in their respective lines of work.

For general statement as to buildings and equipment, see pages 39-42.

For information as to tuition charges, fees, etc., see pages 45-6.

The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

Civil Engineering.

Professor CORY.

The instruction is given by means of lectures and recitations, supplemented by draughting, field, and laboratory work. The field work embraces the modern methods of land, railroad, and mining surveying, while



laboratory work is provided in Chemistry, Geology, Physics, and Engineering. The course of instruction has been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practical engineers.

There is a complete equipment of Transits, Compasses, Levels, Chains, Leveling-rods, Stadia rods, etc., and students have free access to the museums and laboratories in all the other departments of the University.

COURSE IN CIVIL ENGINEERING.

Freshman Year.

First Semester.

Plane Trigonometry and Solid Geometry	3
Algebra.....	2
English—Rhetoric, Composition and Literature.....	3
French or German—Grammar and Reader.....	3
Drawing—Free-hand shading, geometrical projections, lettering	4
Shop—Use of joiners' tools and wood-turning.....	3

Second Semester.

Spherical Trigonometry and Analytical Geometry.....	3
Algebra.....	2
English—Rhetoric, Composition and Literature.....	2
French or German—Reading.....	3
Descriptive Geometry—Orthographic projections, problems of points, lines and planes. Representations of surfaces, tangencies and intersections, perspective and isometric.....	4
Drawing—Problems in Descriptive Geometry.....	2
Shop—Pattern-making.....	2

Sophomore Year.

First Semester.

Chemistry.....	4
Drawing—Elements of machine drawing.....	2
Surveying—Use of instruments, the theory and practice of Land Surveying, Topography.....	4
Physics.....	3
Mathematics—Analytical Geometry.....	3
Shop—Forging.....	2

Second Semester.

Physics	5
Drawing—Tinting, tracing, blue printing and topographical.....	2
Chemistry	4
Mathematics—Calculus.....	3
Shop—Forging.....	2
Metallurgy.....	2

Junior Year.

First Semester.

Mechanics of Engineering.....	5
Calculus.....	3
Railroad Engineering—Economic theory of location, curves, field engineering, etc.....	5
Steam Engineering—Types of engines and boilers, details of construction, indicator, valve gears and valve adjustments.....	3
Elective.....	0-2

Second Semester.

Mechanics of Engineering.....	3
Calculus.....	3
Framed structures—Analytical and graphical analysis.....	3
Geology—Economic.....	3
Engineering laboratory.....	2
Surveying—Two weeks' field practice and one week's office work.....	1
Elective.....	0-3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Astronomy—Practical Astronomy, with night observations.....	5
Masonry and Foundations.....	3
Bridge Engineering—Design and details.....	3
Machine Design.....	2
Engineering laboratory.....	2
Elective.....	0-3

Second Semester.

Geodesy and Least Squares—Figure of the earth, U.S. Coast and Geodetic Surveys, etc.....	3
Hydraulic Engineering—Water collection and distribution, water-wheels, turbines.....	3
Right and Oblique Arches—Stereotomy and stone-cutting.....	3
City and Sanitary Engineering.....	3
Engineering laboratory.....	2
Geodetic Practice—Two weeks' field practice and one week's office work.....	1
Elective.....	0-3

COURSE IN SURVEYING.

A special course in Surveying is offered in addition to the regular four years' course. This is designed especially for those wishing to fit themselves for the position of County Surveyor or Government Land Surveyor. A certificate of proficiency is given to those who complete this course which may be done in forty weeks. The requirements for entrance are the same as those required for the regular course, with a working knowledge of Trigonometry added.

For the Rollins scholarship, see page 51.

Electrical Engineering.

Assistant Professor SHAW.

This course fits young men for electrical designing, manufacturing, contracting, and for the installation and management of light and power stations.

The first two years are devoted to preliminary training in the languages, mathematics, the sciences, and in drawing and shopwork. The technical work comes in the last two years and consists of the theory and principles of electricity and magnetism; electrical measurements; calibration of instruments; tests of all kinds; design and construction; study of special problems.

Especial attention is paid to alternating current phenomena.

Instruction is given by means of recitations, lectures, and laboratory work.

The apparatus is new, from the best makers, and includes instruments for electrical measurements of precision, a storage battery conveniently arranged for testing, an electric light plant, various types and sizes of direct and alternating current dynamos and motors, measuring instruments, etc.

COURSE IN ELECTRICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 158).

Junior Year.

First Semester.

Mechanics of Engineering (See M. E. course, page 162).....	5
Calculus	3
Direct Current Dynamos—Principles, construction, design and operation of generators, motors, etc.; power transmission and distribution; system and plants. Laboratory: characteristics, efficiencies, output limits, insulation tests, diseases and remedies.....	5
Electrical measurements—General principles and laws and their application in electrical, magnetic and electromagnetic measurements of precision; cable testing; calibration of instruments.....	2
Elective.....	0-3

Second Semester.

Mechanics of Engineering.....	3
Calculus.....	3
Direct Current Dynamos.....	4
Mathematical Electricity and Magnetism—Elementary theory of electrostatics and electrodynamics.....	3
Electrical measurements	2
Elective	0-3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Alternating Currents—Theory of current flow; single and multiphase generators, motors, transformers and instruments; system of light and power distribution; laboratory tests as to regulation, operation and efficiency; calibration of instruments.....	4
Steam Engineering (See M. E. course, page 162).....	3
Machine Design.....	2
Heat and Light.....	3
Shop—Machine and vise work on metals	3
Elective.....	0-3

Second Semester.

Alternating Currents.....	5
Dynamo Design and Construction.....	5
Steam Boilers (See M. E. Course, page 163).....	2
Shop—Machine and vise work on metals.....	3
Elective.....	0-3

Mechanical Engineering.

Professor MARX.

The practical and theoretical training given is intended to prepare young men for responsible positions. The practical work familiarizes them with the use of machine and hand tools; the theoretical acquaints them with the principles underlying all machine construction. Students thus become familiar with the conditions and problems that confront all designers, and all managers of machine shops.

In the study of prime movers special attention is given to turbines and other water motors, and to the steam engine.

In machine construction the theory of mechanism is thoroughly studied. It embraces the study of gearing, screws, cranks and levers, together with the design of machines and the materials used in their construction.

In mill-work, ventilation, heating, lighting, fire protection, arrangement of shafting, belting and machinery in manufacturing establishments, practical problems involving strength of shafting, belting, gearing, and the electrical transmission of power are fully treated.

In steam engineering attention is given to chimneys, furnaces, boilers, and the setting of boilers with reference to proper combustion of fuel, to securing the greatest efficiency in the production of steam, and to proportioning parts for strength, durability and accessibility for repairs and cleaning. The care and management of boilers, engines and entire steam plants is an essential part of the study.

While pursuing these studies, the student is required to make plans, working drawings and estimates.

In the laboratory special attention is given to tests of engineering materials with regard to tension, crushing, elongation and shearing; engine and boiler trials, as to efficiency; calorimeter trials as to quality of steam; valve-setting by aid of indicator. The erection, alignment and setting of engines are carefully considered.

COURSE IN MECHANICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the course in Civil Engineering, page 138.

Junior Year.

First Semester.

Mechanics of Engineering—Statics, dynamics.....	5
Steam Engineering—Elements of steam engineering; description of types of boilers; engines, details of construction, dimensions for given power plant, study of steam engine; indicator, valve gears and valve adjustments.....	3

Mathematics—Calculus.....	3
Kinematics—Principles of mechanism, rolling curves, teeth of wheels, quick return motion, straight line motion.....	2
Applied Electricity.....	3
Elective.....	0-2

Second Semester.

Mechanics of Engineering—Strength of material.....	3
Applied Electricity	3
Framed Structures—Analytical and graphical treatment.....	3
Mathematics—Calculus.....	3
Kinematics—Valve and link motions.....	2
Boilers.....	2
Elective.....	0-2

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Steam Engine:—Detail study of different types, design and construction.	3
Mechanical drawing—Design of engine and boiler.....	2
Framed Structures—Iron roof and building; construction, design, and detail.....	3
Machine design.....	2
Shop—Machine and vise work.....	3
Heat and light.....	3
Elective	0-2

Second Semester.

Thermodynamics of steam and other heat engines.....	2
Mill Engineering—Mill and factory construction, ventilation, steam- heating, fire protection.....	2
Hydraulics and Hydraulic Motors—Water wheels, turbines, and pumps.	3
Mechanical Drawing—Engine, details and estimates.....	3
Mechanical Laboratory.....	2
Shop—Machine and vise work.....	3
Elective.....	0-3

The students in Mechanical Engineering have the use of full sets of working drawings of standard modern engines, a small but well-equipped technical library, Indicators, Planimeters, Calorimeters, Tachometers, Thermometers, Crosby Steam-gauge Tester, Injectors, Absorption and Transmission Dynamometers, Engine models, etc. They have the advantage of the shops of the College of Agriculture and Mechanic Arts. In these

shops they are trained in the use and care of wood and iron-working tools. The 12" X 36" Corliss engine and five boilers (one down draft and four tubular return) are used for experiment work. They aggregate 400-horse power.

The students in Mechanical Engineering have the use of the Testing, Hydraulic and Cement laboratories of the Civil Engineering department, and the Electrical laboratory, in such branches as are required by the M. E. course.

For description of shops, see "School of Mechanic Arts," page 153.

Sanitary Engineering.

Professor CORY.

This course is intended to give the students such knowledge of the principles and practices of modern sanitation as will make them distinctively sanitary engineers. To this end the course has been made most thorough as regards those sciences which immediately underlie this particular branch, Biology, Physiology, Bacteriology, and Chemistry.

The modern methods of constructing buildings, ventilation, lighting, heating, plumbing, sewage and garbage disposal, water supply and city engineering are taught thoroughly by means of lectures, recitations, laboratory work, and the study of existing buildings and plants.

COURSE IN SANITARY ENGINEERING.

The Freshman year is identical with that of the Civil Engineering course (page 155).

Sophomore Year.

<i>First semester.</i>		<i>Second semester.</i>	
Chemistry.....	4	Physics.....	5
Surveying.....	4	Drawing—Tinting, tracing, blue printing and topographical.....	2
Physics.....	3	Chemistry.....	4
Mathematics—Analytic Geometry..	3	Mathematics—Calculus.....	3
Biology.....	4	Biology.....	4

Junior Year.

<i>First semester.</i>		<i>Second semester.</i>	
Mechanics of Engineering.....	5	Mechanics (and Laboratory).....	4
Calculus.....	3	Calculus.....	3
Steam Engineering.....	3	Chemistry.....	4
Biology.....	2	Geology.....	3
Chemistry.....	2	Surveying.....	1
Elective.....	0-3	Elective.....	0-3

Senior Year.

<i>First semester.</i>		<i>Second semester.</i>	
Water supply.....	3	Sewage.....	3
Masonry and foundations.....	3	Hydraulics.....	3
Geology.....	3	Municipal Engineering.....	3
Engineering Laboratory.....	2	Steam Boilers.....	2
Heating and ventilation.....	2	Physiology.....	3
Bacteriology.....	3	Chemistry (technical).....	2
Elective.....	0-3	Elective.....	0-2

Architecture.

This course, offered for the first time, is intended to train men for practical work as draughtsmen, designers, contractors, and architects.

History of Architecture is taught by the Archæological Department (see page 79), which is well equipped. Drawing is continuous throughout the course, particular attention being paid to rapid, free-hand sketching.

The details of modern building construction are carefully considered from the theoretical and the practical standpoints. Specifications, estimates and contracts are carefully taught.

The instruction is given by means of lectures, recitations, and practice in drawing, modeling, and designing, besides work in the Mechanical Laboratory.

The Junior and Senior work of this course will not be offered in 1898-99.

COURSE IN ARCHITECTURE.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 158).

Junior Year.

<i>First semester.</i>		<i>Second semester.</i>	
Mechanics of Engineering.....	5	Mechanics of Engineering.....	3
Calculus	3	Calculus.....	3
Steam Engineering.....	3	Framed Structures.....	3
History of Architecture.....	3	History of Architecture.....	3
Sketching	1	Strength of Materials—Laboratory	2
Elective.....	0-3	Sketching.....	1
		Elective	0-3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

<i>First semester.</i>		<i>Second semester.</i>	
Masonry and Foundation.....	3	Tall Building Construction.....	3
Construction.....	3	Decoration.....	3
Heating and Ventilation.....	2	Construction—Specifications, Estimates, Contracts.....	3
Architectural Designing.....	4	Right and Oblique Arches.....	3
Building Materials.....	3	Plumbing, Sighting, and Sanitation	3
Elective	0-3	Elective	0-3

***Hydraulic Engineering.**

This is a graduate course, open to those who have completed the courses in Civil and Mechanical Engineering and to others having equivalent preparation.

It is intended to furnish thorough training in the utilization of water as a source of power, water supply, drainage, irrigation, and waterways.

COURSE IN HYDRAULIC ENGINEERING.

Water Motors.....	3	Steam Boilers.....	2
Pumping Machinery.....	3	Thermodynamics.....	2
Water Supply.....	3	Rivers, Harbors, and Canals.....	2
Hydraulic Laboratory.....	3	Hydraulic Laboratory.....	3

Thesis: An original investigation of some important problem and the presentation of the results in a satisfactory thesis is required.

*This course will not be given in 1898-99.

VIII. The School of Mines and Metallurgy.

A Department of the University of the State of Missouri.

(At Rolla, Missouri.)

EXECUTIVE COMMITTEE.

Rev. JOHN D. VINCIL, D. D., Chairman.....	St. Louis
Hon. M. E. BENTON.....	Neosho
Hon. JAS. T. MOORE.....	Lebanon
M. F. FAULKNER, Secretary.	D. W. MALCOLM, Treasurer.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

GEORGE EDGAR LADD, Ph. D.,
Director and Professor of Mining and Metallurgy.

ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.

EUGENE THOMAS ALLEN, Ph. D.,
Professor of Chemistry.

GEORGE REINOLD DEAN, C. E., B. S.,
Professor of Mathematics.

PAUL JULIUS WILKINS, B. S.,
Instructor in Modern Languages.

JOHN BENNETT SCOTT,
Instructor in English.

ROBERT PEEL GARRETT, C. E., B. S.,
Instructor in Shopwork and Drawing.

ALEXANDER FORSYTH, A. B.,

Instructor in Metallurgy.

GEORGE WALTER DEAN, B. S.,

Assistant in Chemical Laboratory.

Organization :

In 1870, the General Assembly, in accepting the donation by the general government of lands for educational purposes, established an Agricultural College and a School of Mines and Metallurgy, "the leading object of these Colleges" being "to teach such branches as are related to agriculture and the mechanic arts and mining, including military tactics, and without excluding other scientific and classical studies, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." (R. S. 1869, Section 8739). The statutes fix the status of the School of Mines as a College of the State University. Its affairs are under the immediate supervision of the Executive Committee, consisting of three members of the Board of Curators of the University.

Location :

The School is located at Rolla, the county seat of Phelps county, on the St. Louis & San Francisco railroad, about midway between St. Louis and Springfield. Rolla has an altitude of 1140 feet above sea level, and enjoys an agreeable and notably healthful climate. It is midway between the mining districts of Southeast and Southwest Missouri.

Requirements for Admission:

Requirements for admission to the School of Mines by examination in the fall of 1898 will be as follows:

1. History. The equivalent of the work given in Myers' General History—one unit.
2. English. English Grammar and Composition. The candidate will be expected to have had at least as much Literature as is required in the first year of a good High School.
3. Algebra. The equivalent of Milne's High School Algebra, through Quadratic Equations—one unit.
4. Plane Geometry. The equivalent of Phillips and Fisher's Geometry.
5. Elementary Physics. Properties of Matter. Laws of Motion. Mechanics of Fluids and Heat. In the fall of 1898 the candidate may substitute either Chemistry or Biology for Physics, but the latter is recommended.

The student must pass without condition the examinations on at least three of the five subjects required. The conditions must be made up in the first year of the student's course, under arrangements to be approved by the professor of the subject.

The School of Mines offers three professional courses:

- I. Mining Engineering.
- II. Civil Engineering.
- III. Chemistry and Metallurgy.

Degrees:

For the completion of any of these courses the degree of Bachelor of Science (B. S.) is given. The further degree of Engineer of Mines (E. M.), Civil Engineer (C. E.), or Metallurgical Engineer (Met. E.), may be given either for an additional year's work in residence, selected with the approval of the Faculty from the graduate courses; or may be conferred on one who since his graduation as B. S., has had experience in the actual practice of his profession, of such duration and value as, in the judgment of the Faculty, to warrant its bestowal.

I. COURSE IN MINING ENGINEERING.

This is suited to fit a man for the conduct of mining operations in all their variety, from the prospecting for the mine through its working and the treatment of its ores to the delivery of the finished product on the market.

Freshman Year.

First Term.

Mathematics—Higher Algebra, lectures and recitations.....	5
Chemistry { Lectures.....	5
Laboratory, afternoon.....	1
English—Rhetoric, recitations.....	5
Drawing—Free Hand, Lettering and Pencil Shading, afternoons.....	2
Shop practice—Wood-working, afternoons.....	2

Second Term.

Mathematics. { Trigonometry, recitations.....	5
Geometry, recitations.....	5
English—Literature, recitations	5
Chemistry—Laboratory, afternoon.....	1
Drawing—Plane Problems and Tracing, afternoons	2
Shop practice—Wood-working, afternoons.....	2

Third Term.

Mathematics—Trigonometry, recitations.....	4
Physics—Lectures and recitations.....	3
English—Literature, recitations	2
Chemistry—Laboratory, afternoon.....	1
Drawing—Tinting and Topography, afternoons.....	2
Shop practice—Wood-working, afternoons.....	2

Sophomore Year.

First Term.

Mathematics—Analytic Geometry, lectures and recitations.....	5
Chemistry—Inorganic { Lectures and recitations.....	4
Laboratory, afternoons	2
Surveying { Lectures and recitations.....	3
Field practice, afternoons	3
French or German, recitations.....	3

Second Term.

Descriptive Geometry	{ Lectures and recitations.....	5
	{ Drawing, afternoons.....	2
Chemistry—Applied	{ Lectures and recitations.....	5
	{ Laboratory, afternoons.....	3
French or German, recitations.....		5

Third Term.

Mathematics—Calculus, lectures and recitations.....		5
Physics	{ Lectures and recitations.....	5
	{ Laboratory, afternoons.....	2
French or German, recitations.....		5
Chemistry—Qualitative laboratory work, afternoons.....		2
Surveying—Field practice, afternoon.....		1

*Junior Year.**First Term.*

Mathematics—Calculus, lectures and recitations.....	3
Physics { Lectures and recitations.....	5
 { Laboratory, afternoons.....	2
Geology, lectures.....	3
Mineralogy, lectures, recitations and laboratory work.....	4
Ore Dressing, lectures and laboratory work.....	Mondays
Chemistry—Quantitative, laboratory.....	3

Second Term.

Physics	{ Lectures and recitations.....	2
	{ Laboratory, afternoons.....	2
Geology, lectures.....		2
Mineralogy, lectures, recitations and laboratory.....		4
Mechanics of Engineering, lectures and recitations.....		5
Masonry Construction, lectures and recitations.....		3
Chemistry—Quantitative Analysis, laboratory, afternoons.....		3

Third Term.

Geology, lectures.....		3
Ore Dressing	{ Lectures and recitations.....	4
	{ Laboratory.....	Mondays
Metallurgy, lectures and recitations.....		4
Stereotomy	{ Lectures and recitations.....	1
	{ Drawing, afternoons.....	2
Chemistry, laboratory, afternoons.....		2

*Senior Year.**First Term.*

Metallurgy,	{ Lectures.....	5
	{ Laboratory.....	Mondays
Electrical Transmission,	{ lectures.....	5
	{ dynamo laboratory, afternoons.....	2
Framed Structures, lectures and recitations.....		5
Metallurgical Designing, afternoon.....		1

Second Term.

Metallurgy,	{ Lectures and recitations.....	5
	{ Laboratory.....	Mondays
Mining,	{ Lectures.....	4
	{ Designing, afternoons.....	4
Hydraulics, lectures and recitations.....		5

Third Term.

Mining, lectures.....	4
Steam Engineering and Power Transmission, lectures and recitations...	3
Thesis work, afternoons.....	6

II. COURSE IN CIVIL ENGINEERING.

This is a course in Engineering as applied to railways, highways and municipal works.

Freshman Year.

Same as in Mining Engineering.

Sophomore Year.

Same as in Mining Engineering except that in the third term Civil Engineers take Chemical laboratory one afternoon and field practice two afternoons, instead of Chemical laboratory two afternoons and field practice one.

Junior Year.

First Term.

Mathematics—Calculus, lectures and recitations.....	3
Physics, { Lectures and recitations.....	5
{ Laboratory, afternoons.....	2
Geology, lectures	3
Drawing and Field Practice, afternoons.....	3

Second Term.

Geology, lectures.	2
Physics { Lectures and recitations.....	2
{ Laboratory, afternoons.....	2
Mineralogy, lectures and laboratory.....	4
Mechanics of Engineering.....	5
Masonry Construction, lectures and recitations.....	3
Drawing, afternoons.....	3

Third Term.

Geology, lectures.....	3
Metallurgy, lectures and recitations.....	4
Lines of Communication, lectures and recitations.....	5
Stereotomy, lectures and recitations.....	1
Drawing and Field Practice, afternoons.....	5

Senior Year.

First Term.

Framed Structures, lectures and recitations.....	5
Astronomy, lectures and recitations.....	3
Drawing and Field Practice, afternoons.....	3
Elective { Lectures and recitations..	5
{ Afternoons. .	2

Second Term.

Hydraulics, lectures and recitations.....	5
Elective { Lectures and recitations.....	8
{ Afternoons	1
Designing and drawing, afternoons.....	4

Third Term.

Bridge and Sanitary Engineering, lectures and recitations	3
Steam Engineering and Power Transmission.....	3
Thesis Work, afternoons.....	6

III. COURSE IN CHEMISTRY AND METALLURGY.

This is a course in which some of the Engineering of Course I is replaced by some detailed work in Chemistry and Metallurgy. It has in view, especially, processes subsequent to the delivery of the ore above the ground and fits a man to work as assayer and chemist, or in other connections, with concentrating plants and smelters. In the Senior year an option is allowed the student, as he may prefer to specialize more upon the metallurgical or upon the chemical side.

Freshman Year.

Same as in Mining Engineering, except that German is obligatory.

Sophomore Year.

Class-room work the same as in Mining Engineering except that during the first term Elective 3 is substituted for Surveying. The laboratory work is as follows: In Chemistry, 5 afternoons in the first term and 3 in the second and third terms; in Drawing, 2 afternoons in the second term; and in Physics, 3 afternoons in the third term.

Junior Year.**First Term.**

Mathematics—Calculus, lectures and recitations.....	3
Physics, { Lectures and recitations.....	5
{ Laboratory, afternoons.....	2
Geology, lectures.....	3
Mineralogy, lectures and laboratory.....	4
Chemical Laboratory, afternoons.....	2
Ore Dressing, lectures and laboratory work.....	Mondays

Second Term.

Physics, { Lectures and recitations.....	2
{ Laboratory, afternoons.....	2
Geology, lectures.....	2
Mineralogy, lectures and laboratory.....	4
Masonry Construction, lectures and recitations.....	3
Theoretical Chemistry, lectures and recitations.....	5
Chemical Laboratory, afternoons.....	3

Third Term.

1 and 2 or 3 { 1. Geology.....	3
{ 2. Stereotomy, 1; Drawing, afternoon.....	1
{ 3. Theoretical Chemistry.....	5
Ore Dressing, laboratory, Mondays.....	4
Metallurgy, lectures and recitations.....	4
Chemical Laboratory, afternoons.....	3

Senior Year.

First Term.

Metallurgy, lectures and recitations.....	5
Thermodynamics, lectures and recitations.....	2
Organic Chemistry, lectures and recitations.....	3
Chemical Laboratory, afternoons.....	2
Designing, afternoons.....	2
Elective.....	5

Second Term.

Metallurgy, lectures and recitations.....	5
Electro-Metallurgy, { Lectures and recitations.....	3
{ Laboratory, afternoons.....	3
Organic Chemistry, lectures and recitations.....	2
Elective.....	3
Chemical Laboratory, afternoons.....	2

Third Term.

Metallurgical Problems.....	2
Metallurgical Laboratory.....	Mondays
Organic Chemistry.....	4
Chemical Laboratory and Thesis, afternoons.....	5

For further information, address

GEO. E. LADD, Director,
Rolla, Mo.

LIST OF STUDENTS.

Graduate Department.

Name.	Postoffice.	County.
Barth, Irvn Victor, A. B.....	Columbia	Boone
Bohnenkamp, William Louis, LL. B.	Fayetteville, Ill. ....	.....
Booth, Nathaniel Ogden, B. Agr....	Columbia	Boone
Boulton, Payle Augustus, B. L., M. L.	"	"
Bryan, William Alexander, LL. B...	Brookfield.....	Linn.....
Christian, George Milton, A. M.....	Ashland	Boone.....
Conley, Milton Kobards, A. B.....	Columbia	"
Conley, William Thompson, B. S....	"	"
English, George Harrison, Jr., A. B.	Kansas City.....	Jackson
Hicks, Mrs. Verna Sheldon, A. B.....	Columbia	Boone.....
Jennings, George Washington, LL.B.	Lee's Summit	Jackson.....
Moore, Washington K., B. L.....	Columbia	Boone
Munday, Bert, B. S.....	Canton.....	Lewis
Murry, Harvie Dennie, LL. B.....	Brown's Station...	Boone
McGaugh, Elmer T., B. L.....	Richmond	Ray.....
Pemberton, Morton Hord, B. S.....	Fulton.....	Callaway
Reid, Robert Lee, M. D.....	Columbia.....	Boone
Riggs, Inez L., B. L., M. L.....	Farmer	Pike.....
Scott, Mary Pauline, A. B.....	Canton	Lewis
Smith, Hugh Allison, B. L.....	Coal.....	Henry.....
Thom, Charles, B. A., M. A.....	Minonk, Ill.....	.....
Tindall, Mrs. Lula Gentry, B. L.....	Columbia.....	Boone.....
Williams, Albert Jefway, LL. B.....	Pattonsburg	Davless

-23

Academic Department.

Name.	Course	Postoffice.	County.
SENIOR CLASS.			
Adams, George Paul.....	B. L.	King City.....	Gentry.....
Ammerman, Gertrude.....	A. B.	Columbia.....	Boone.....
Barnes, Charles Merlin.....	B. L.	New Madrid.....	New Madrid.....
Blackwell, Laura Craig.....	A. B.	Columbia.....	Boone
Blair, Jessie Alice.....	B. L.	Sedalia	Pettis.....
Botts, Lena Chattau.....	"	Molino.....	Audrain
Bush, Aubrey Charles.....	"	Columbia.....	Boone
Cannell, Edward.....	B. S.	Hatton.....	Callaway
Carroll, Stephen Samuel.....	A. B.	Vandalla	Audrain
Dewey, Charles Edward.....	"	Jefferson City....	Cole.....
Gelger, Harley Valter	B. L.	Rich Hill.....	Rates
Gerig, John Lawrence.....	A. B.	Columbia.....	Boone
Gray, Felix Zollie.....	"	Santa Fe.....	Monroe
Harrison, Cora	"	Bethany	Harrison
Henderson, Cicero Adolphus..	B. L.	Paris.....	Monroe
Holman, Thomas.....	B. S.	Anutt	Dent
Huggins, Gurry Elsworth.....	B. L.	Benton	Scott
Jackson, Clarence Martin.....	B. S.	Martinstown.....	Putnam.....

List of Students

175

Name.	Course	Postoffice.	County.
Knepper, Myrtle.....	B. L.	Guy.....	Atchison.....
McMahan, William Tatom.....	"	Seymour.....	Webster.....
Perkins, Madison Love.....	"	Mountain Grove.....	Wright.....
Perry, Thomas Benton.....	B. S.	Carthage.....	Jasper.....
Phillips, Murray, Jr.....	A. B.	New Madrid.....	New Madrid.....
Price, Charles Sterling.....	B. L.	Columbia.....	Boone.....
Rautenstrauch, Irwin.....	A. B.	Sedalia.....	Pettis.....
Riley, Lottie Marie.....	B. L.	Columbia.....	Boone.....
Russell, Antoine Edward.....	A. B.	Savannah.....	Andrew.....
Switzler, Royall Hill.....	"	Columbia.....	Boone.....
Williams, Horace Beckley.....	"	Dallas, Tex.....	.....
Wilson, William Frank.....	"	Cape Girardeau.....	Cape Girardeau.....

—30

JUNIOR CLASS.

Alexander, Emmet Gerald.....	A. B.	Blackburn.....	Saline.....
Bell, Charles Thomas.....	"	Barnard.....	Nodaway.....
Bogard, Margaret Ethel.....	B. L.	Mendon.....	Chariton.....
Brandenberger, Jacobina.....	B. S.	Linneus.....	Linn.....
Campbell, Philip Leonidas.....	B. L.	Goliad, Tex.....	.....
Campbell, Laura Belle.....	A. B.	Columbia.....	Boone.....
Cleary, Fred. Charles.....	"	Chillicothe.....	Livingston.....
Creason, Goodwin.....	B. L.	Columbia.....	Boone.....
Depee, Emma.....	A. B.	Greenfield.....	Dade.....
Durham, Lisbon Elwood.....	B. L.	Elston.....	Cole.....
Edmonds, Raymond Saufley.....	"	Miami.....	Saline.....
Edwards, John Crockett.....	"	Centralla.....	Boone.....
Ginnings, Robert Meade.....	"	Kirksville.....	Adair.....
Gladney, Franklin Young.....	A. B.	Auburn.....	Lincoln.....
Greer, Bertha Alice.....	"	Joplin.....	Jasper.....
Harnage, Jesse Lee.....	"	Tahlequah, N. M.....	.....
Harshe, Robert Bartholow.....	B. L.	Columbia.....	Boone.....
Hawkins, Richmond Laurin.....	A. B.	".....	".....
Houck, Giboney.....	A. B.	Cape Girardeau.....	Cape Girardeau.....
Howard, Thomas Perry.....	"	Carthage.....	Jasper.....
Howard, Ida Elizabeth.....	B. L.	Columbia.....	Boone.....
Kleinschmidt, Rudolph.....	"	St. Louis City.....	.....
Kline, Mary.....	"	Bismarck.....	St. Francois.....
Lockwood, Bartlytte Marshall.....	"	Columbia.....	Boone.....
Moore, Ida May.....	"	Perry.....	Ralls.....
Moore, Henry Stephen.....	A. B.	Oran.....	Scott.....
McFarland, Byron.....	"	Monroe City.....	Monroe.....
McFarland, Roy.....	"	".....	".....
Powell, Bessie.....	B. L.	Columbia.....	Boone.....
Parkhurst, Charles Leonard.....	B. S.	Sweet Springs.....	Saline.....
Potter, Mary Bassett.....	B. L.	St. Joseph.....	Buchanan.....
Quigley, William Henry.....	A. B.	Albany.....	Gentry.....
Robertson, George Gordon.....	"	Cuba.....	Crawford.....
Salmon, Merritt Kimbrough.....	"	Clinton.....	Henry.....
Seward, William Henry.....	"	Oakridge.....	Cape Girardeau.....
Sinclair, Elizabeth May.....	B. L.	Columbia.....	Boone.....
Smith, Clyn.....	B. S.	Collins.....	St. Clair.....
Utley, Lee.....	B. L.	Miami.....	Saline.....
Vaughn, Earnest Van Court.....	"	Columbia.....	Boone.....
Walmsley, John Fletcher.....	A. B.	Sedalia.....	Pettis.....
Williams, Clyde.....	B. L.	Grubville.....	Jefferson.....
Woodson, Warren Rice.....	"	Montipio, Mexico.....	.....
Wulfert, Margaret Anne.....	"	Columbia.....	Boone.....

—43

SOPHOMORE CLASS.

Anderson, John Lewis.....	A. B.	Columbia.....	Boone.....
Arnold, Mercer.....	B. L.	Joplin.....	Jasper.....
Barlow, Gilbert.....	A. B.	Bethany.....	Harrison.....
Bassett, Arthur.....	"	Paris.....	Monroe.....
Blatsdell, Charles Franklin.....	A. B.	Cincinnati, Ohio.....	.....
Briscoe, Edward Andrew.....	B. S.	Tipton.....	Moniteau.....
Crider, Edgar Lawrence.....	B. L.	Maitland.....	Holt.....
DeBolt, Edith Laurestine.....	"	Trenton.....	Grundy.....

Name.	Course	Postoffice.	County.
Delster, John Louis.	A. B.	Harlem.	Platt.
Ficklin, Arthur Graham.	"	King City.	Gentry.
Ganson, Louis Stevens.	"	Kansas City.	Jackson.
Gerig, Rosalie.	"	Columbia.	Boone.
Goodson, Paul.	B. L.	Carrollton.	Carroll.
Gray, Mary.	"	Columbia.	Boone.
Guitar, Emily.	"	"	"
Halliburton, Westley.	"	Carthage.	Jasper.
Hunter, Lewis Linn.	A. B.	Benton.	Scott.
Lee, Francis Alexander.	B. L.	Lamar.	Barton.
Lucas, William Cardwell.	A. B.	Osceola.	St. Clair.
Moore, William Dunn.	"	St. Louis City.	"
McMillan, Paul Duncan.	B. S.	Maryville.	Nodaway.
McReynolds, Allen.	B. L.	Carthage.	Jasper.
Phelps, Mabel.	"	Kirkwood.	St. Louis.
Schafer, Frederick Charles.	"	Lancaster.	Schuyler.
Scott, Owen Thomas.	"	Ashland.	Boone.
Shipley, Edith.	A. B.	Columbia.	"
Stewart, William Brown, Jr.	B. L.	Moberly.	Randolph.
Switzler, William F., Jr.	A. B.	Columbia.	Boone.
Thurston, Hollis Hendrix.	B. L.	Woodlandville.	"

—29

FRESHMAN CLASS.

Ahrens, Anna Helen.	B. L.	Ft. Smith, Ark. ....	....
Allen, Elmer J.	A. B.	Dadeville.	Dade.
Bain, Homer Judson.	B. L.	Trenton.	Grundy.
Bannister, William Daniel.	"	Monroe City.	Monroe.
Barnhardt, Wilford Caldwell.	"	Columbia.	Boone.
Bass, Hugh Glenn.	A. B.	"	"
Baum, William Weirich.	"	Sedalia.	Pettis.
Becker, Amanda Frederika.	B. S.	St. Louis City. ....	....
Bell, Elexious Thompson.	B. L.	Hatch.	Ralls.
Bell, Virginia Cordella.	"	"	"
Berry, Alleen.	B. S.	Columbia.	Boone.
Blair, Irene Elise.	B. L.	Sedalia.	Pettis.
Brandenburger, Leopold.	"	Linneus.	Linn.
Brent, Arthur Wellington.	"	Kirkwood.	St. Louis.
Burk, Milton Clarence.	"	Tipton.	Moniteau.
Caldwell, Lou Belle.	"	Slater.	Saline.
Campbell, Kalistia Leon.	"	Edinburg.	Grundy.
Camron, Elisha Franklin.	"	Nevada.	Vernon.
Cauthorn, Emma.	"	Columbia.	Boone.
Cloyd, Alva Lee.	B. S.	Salisbury.	Chariton.
Dinmitt, Roy.	"	Shelbyville.	Shelby.
Dobyns, Ida Dulaney.	B. L.	Shelbina.	"
Doll, Alva Chester.	"	Hamilton.	Caldwell.
Fast, Carl Frederick.	A. B.	Sedalia.	Pettis.
Fugitt, Reuben Williams.	"	Carthage.	Jasper.
Hall, John Chappellear.	B. L.	Marceline.	Linn.
Hall, James Reuben.	"	Columbia.	Boone.
Hardy, Joseph Bryant.	"	Waterloo, Ill. ....	....
Hawkins, Katherine Bell.	A. B.	Paris.	Monroe.
Hicks, Andrew Jackson.	B. S.	McClurg.	Taney.
Hill, Samuel Matthews.	B. L.	Slater.	Saline.
Hitch, Ruth Amanda.	"	Cuba.	Crawford.
Hogan, Frances Agnes.	"	Moberly.	Randolph.
Holman, James Napoleon.	"	Excelsior Springs.	Clay.
Jackson, Alpha Jane.	"	Chillicothe.	Livingston.
Jamison, Mary Elizabeth.	"	Columbia.	Boone.
Jenkins, Charles Aaron.	"	Longwood.	Pettis.
Jennings, Arthur.	A. B.	Centralla.	Boone.
Johnson, Carrol Allan.	B. L.	Columbia.	"
Johnson, William Sherman.	A. B.	Tuscumbia.	Miller.
Jones, William Henry.	"	St. Louis City. ....	....
Keller, Anna Katherine.	B. L.	Moberly.	Randolph.
Kroesch, Samuel.	"	California.	Moniteau.
Lindsey, Mary Helen.	B. S.	Lockwood.	Dade.
Lohr, Tillie.	B. L.	St. Joseph.	Buchanan.

List of Students

177

Name.	Course	Postoffice.	County.
Maddox, Joseph Shelby.....	A. B.	Long Branch....	Monroe.....
Miller, Benjamin Franklin.....	"	Memphis.....	Scotland.....
Moran, Hampton.....	B. L.	Licking.....	Texas.....
Motter, Francis Marion.....	"	Kirksville.....	Adair.....
Murphy, Selah Hart.....	B. S.	Trenton.....	Grundy.....
McQuitty, Ewell Fielding.....	A. B.	Columbia.....	Boone.....
McKeynolds, John William.....	B. L.	Carthage.....	Jasper.....
Nesbitt, Pleasant Pomeroy.....	B. S.	St Joseph.....	Buchanan.....
Peak, John Lee.....	B. L.	Midway, Ky.....	.....
Pearcy, Claude Otis.....	"	Thornfield.....	Ozark.....
Price, Perry Riley.....	"	Plattsburg.....	Clinton.....
Records, Thomas Herbert.....	A. B.	Blue Springs.....	Jackson.....
Robinson, Roy D.....	B. L.	Appleton City.....	St. Clair.....
Robinson, Harry E.....	"	".....	".....
Row, David Otto.....	B. S.	Columbia.....	Boone.....
Scudder, William Russell.....	A. B.	Kearney.....	Clay.....
Shelby, Thomas Kelly.....	"	Lexington.....	Lafayette.....
Sims, Fannie Fern.....	B. L.	Moberly.....	Randolph.....
Smith, Angeline.....	A. B.	Kahoka.....	Clark.....
Sneed, Carl Miller.....	"	Centralia.....	Boone.....
Steele, Asa George.....	B. L.	Ladonia.....	Audrain.....
Stephens, James L.....	A. B.	Columbia.....	Boone.....
Storm, Fred. E.....	B. L.	Maryville.....	Nodaway.....
Tate, Ernest.....	A. B.	Hallsville.....	Boone.....
Taylor, Bertis Orin.....	B. L.	Windsor.....	Henry.....
Tindall, Wallace Robertson.....	B. S.	Salisbury.....	Chariton.....
Tuttle, Floyd Wilkins.....	A. B.	Columbia.....	Boone.....
Wagner, Laura Sophia.....	B. L.	Boonville.....	Cooper.....
Waterworth, Edward Brooks.....	A. B.	St. Louis City.....	.....
Weeks, Effie See.....	B. S.	Williamsburg.....	Callaway.....
Westfall, John J.....	"	Perry.....	Ralls.....
Williams, Thomas Albert.....	B. L.	Moberly.....	Randolph.....
Wood, Charles Wayne.....	A. B.	Boles.....	Franklin.....

—78

SPECIAL STUDENTS.

Babb, Mrs. Clara Louise.....	.....	Columbia.....	Boone.....
Blake, Maxwell.....	B. L.	Kansas City.....	Jackson.....
Brown, Charles Robert.....	.....	Leadville, Col.....	.....
Bungardt, Alfred Hiram.....	.....	Kansas City.....	Jackson.....
Bush, Zenna.....	B. L.	Temple, Tex.....	.....
Cauthorn, Louisa Leah.....	.....	Columbia.....	Boone.....
Coleman, Leon Price.....	B. S.	Foristell.....	Warren.....
Craig, Sam Oliver.....	B. L.	Cyrene.....	Pike.....
Davis, Aubrey Wilton.....	"	Shelbyville.....	Shelby.....
Drum, Edward Livingston.....	.....	Marble Hill.....	Bollinger.....
Evans, William Botts.....	.....	Meadville.....	Linn.....
Farmer, Marlin.....	.....	Farmer.....	Pike.....
Hewitt, Elijah William.....	.....	Bethel.....	Shelby.....
Hoffman, Marie.....	.....	Sedalia.....	Pettis.....
Holman, Willis Campbell.....	B. S.	Utica.....	Livingston.....
Jenkins, James Hamilton, Jr.....	.....	Sapp.....	Boone.....
Jones, Mary.....	.....	Fayette.....	Howard.....
Kerr, Caroline B.....	.....	Hannibal.....	Marion.....
Long, Laura Virginia.....	.....	Columbia.....	Boone.....
Nolen, Eugenia Frances.....	B. L.	Paris.....	Monroe.....
Nowlin, Mildred Anna.....	"	Columbia.....	Boone.....
Price, Mrs. Mary Lakenan.....	.....	".....	".....
Pulliam, William Spencer.....	.....	Grayson.....	Clinton.....
Rippey, Jessie Maud.....	.....	Glenwood.....	Schuyler.....
Schoein, Laura Marie.....	.....	Rockport.....	Atchison.....
Todd, Elizabeth Pope.....	.....	Columbia.....	Boone.....
White, Mrs. Catharine.....	.....	".....	".....

—27

IRREGULAR STUDENTS.

Allen, Ethel Armistead.....	B. L.	Columbia.....	Boone.....
Bayless, Gertrude Mabel.....	B. S.	".....	".....
Bohon, Elmer C.....	"	Benbow.....	Marion.....

Name.	Course	Postoffice.	County.
Burkhart, Richard Willis.	B. L.	Columbia.....	Boone.
Cannon, Clarence Andrew	B. S.	Elsberry.....	Lincoln... ..
Collier, Myrtle.....	"	Brest.....	Jasper.....
DeBolt, Ethel Mary.....	B. L.	Trenton	Grundy.....
Doty, Augustus Henry	B. S.	Jamesport.....	Davless.....
Dunlop, Dudley Thomas.....	"	Carrollton.....	Carroll.....
Eitzen, Meta Theresa.	"	Washington	Franklin.. ..
French, Wilbur Manard..	B. L.	Lancaster... ..	Schuyler.. ..
Gordon, Daisy Lonore	B. S.	Columbia.....	Boone.
Guffey, Don Carlos.....	"	Unionville.. ..	Putnam.....
Highley, Mont Frederick.....	B. L.	Farmington.....	St. Francois....
Hunter, Elias Oak.....	B. S.	Moberly	Randolph.
Johnson, Elnora.....	"	Maitland	Holt.....
Kahn, Gussye	"	St. Joseph.....	Buchanan.....
Landauer, Isidore	B. L.	Harrisonville ..	Cass.
Leavenworth, George.	B. S.	Ste. Genevieve...	Ste. Genevieve...
Lockwood, Helen Marie....	"	Columbia....	Boone.....
Michel, Jacob..	"	Prairie City.....	Bates.....
Myer, Lillian	B. L.	Columbia.	Boone.....
McAlester, Berry..	A. B.	"	"
Naylor, George Washington...	"	Maud..	Shelby.
Potter, Peter	B. S.	Springfield.....	Greene.....
Price, Mattie R....	B. L.	Columbia.....	Boone.....
Selvidge, Robert Washington..	"	Holden	Johnson.....
Shipley, Sylvanus Carl..	B. S.	Columbia.....	Boone.....
Steele, Mary Isabel..	"	Ladonia.....	Audrain.....
Stone, Sue Marie.	"	Columbia.....	Boone.....
Wade, William..	B. L.	Bolckow.....	Andrew.....
Warner, Floy	"	Kirkwood	St. Louis.....
Wheeler, Edwin Bennett.	B. S.	St. Louis City ...	.....
Wooldridge, James Henry.. ...	B. L.	Boonville.....	Cooper..

-34

Normal Department.

Name.	Postoffice.	County.
Barnes, Charles Merlin.....	New Madrid.....	New Madrid.....
Blackwell, Laura Craig.....	Columbia.....	Boone
Bogard, Margaret Ethel.....	Mendon.....	Chariton.....
Botts, Lena Chattau	Molino	Audrain
Bush, Aubrey Charles.....	Columbia.....	Boone.....
Carroll, Stephen Samuel.....	Vandalia	Audrain
Cleary, Fred Charles	Chillicothe	Livingston.....
Craig, Sam Oliver.....	Cyrene.....	Pike.....
Gerig, John Lawrence.....	Columbia.....	Boone
Gordon, Daisy Lonore.....	"	"
Gray, Felix Zolle.....	Santa Fe.....	Monroe
Greer, Bertha Alice.....	Joplin	Jasper.....
Guffey, Don Carlos.....	Unionville.....	Putnam.....
Harrison, Cora	Bethany	Harrison
Holman, Thomas	Anutt ..	Dent
Huggins, Gurry Elsworth.....	Lamar.....	Barton ..
Jamison, Mary Elizabeth	Columbia.....	Boone.....
Jenkins, Charles Aaron	Longwood.....	Pettis
Kahn, Gussye.....	St. Joseph.....	Buchanan.....
Keller, Anna Katherine	Moberly.....	Randolph
Lohr, Tillie.....	St. Joseph.....	Buchanan.....
Moore, Ida May.....	Perry.....	Ralls.....
McFarland, Roy	Monroe City.....	Monroe
McReynolds, Allen	Carthage	Jasper
Owen, Jesse Mordecai.....	Fulton	Callaway
Parkhurst, Charles Leonard.....	Sweet Springs.....	Saline.....
Perry, Thomas Benton.....	Carthage.....	Jasper.....
Price, Mattie R.....	Columbia.....	Boone.....
Price, Charles Sterling.....	"	"

List of Students

179

Name.	Postoffice.	County.
Robertson, George Gordon.....	Cuba.....	Crawford.....
Sinclair, Elizabeth May.....	Columbia.....	Boone.....
Smith, Clyn.....	Collins.....	St. Clair.....
Stewart, William Brown, Jr.....	Moberly.....	Randolph.....
Wulfert, Margaret Anne.....	Columbia.....	Boone.....
TEACHERS' COURSE.		
Atchison, Ben Allen.....	Gower.....	Clinton.....
Barton, Mary Margaret.....	Columbia.....	Boone.....
Bell, Maggie Riggs.....	New Hartford.....	Pike.....
Bell, Emma Clara.....	".....	".....
Brown, Enna May.....	Brown's Station.....	Boone.....
Davis, Franklin LaFayette.....	Lebanon.....	Laclede.....
Elmore, Susie.....	Lookout.....	Pettis.....
Erwin, Susie B.....	Avilla.....	Jasper.....
Gallemore, Frances.....	Fayette.....	Howard.....
Garvin, Lee Michel.....	Lee's Summit.....	Jackson.....
Graves, Lydia Cochran.....	Woodlandville.....	Boone.....
Holman, Bertha Smith.....	Utica.....	Livingston.....
Jesse, Richard Henry, Jr.....	Columbia.....	Boone.....
Jones, Mrs. Belinda Nowlin.....	".....	".....
Kimbrough, Marion Overton.....	Moberly.....	Randolph.....
Kinkhorst, Lena.....	Brunswick.....	Chariton.....
McConnell, Frank Warren.....	Sprague.....	Bates.....
McDaniel, Ada.....	Higginsville.....	Lafayette.....
McIlroy, Elizabeth Letitia.....	Clarksville.....	Pike.....
Parsons, Eddie.....	Olney.....	Lincoln.....
Patterson, Edwin Scott.....	Ashland.....	Boone.....
Potter, Frank Henry.....	Palmyra.....	Marion.....
Row, Cynthia.....	Columbia.....	Boone.....
Rumans, Leona.....	".....	".....
Sears, Stella Augusta.....	Huntsville.....	Randolph.....
Taylor, Lucile Gertrude.....	Kansas City.....	Jackson.....
Vaughn, Norma.....	Rensselaer.....	Ralls.....
Wallace, Mrs. James L.....	Columbia.....	Boone.....
Worthington, Anna James.....	Lexington.....	Lafayette.....

—34

—29

Law Department.

Name.	Postoffice.	County.
SENIOR CLASS.		
Baker, John Thomas.....	Gant.....	Audrain.....
Bente, Charles Witherspoon.....	Otterville.....	Cooper.....
Blanton, David Anderson.....	Columbia.....	Boone.....
Booher, Lloyd Webster.....	Savannah.....	Andrew.....
Booth, John Newton.....	Marshall.....	Saline.....
Bridgman, Richard Beldon.....	Bigelow.....	Holt.....
Briscoe, Philip Elias.....	Green Ridge.....	Pettis.....
Cashion, Gilbert Lawrence.....	Perryville.....	Perry.....
Catron, Edward M.....	Port Arthur, Tex.....	".....
Conley, Milton Robards.....	Columbia.....	Boone.....
Cramer, Floyd Bruce.....	Nevada.....	Vernon.....
Crawford, William Calvin.....	Wagoner.....	Cedar.....
Davis, Robert Hugh.....	Patterson.....	Wayne.....
Dow, Harvey Dill.....	Georgetown.....	Pettis.....
Dunham, Samuel S.....	New Cambria.....	Macon.....
Duvall, Arthur.....	Butler.....	Bates.....
Halstead, Samuel Reeves.....	Lawson.....	Ray.....
Hamilton, Edward Richard.....	Columbia.....	Boone.....

Name.	Postoffice.	County.
Harris, Frank Gaines.....	Saling	Audrain
Haydon, Curtis.....	Deer Park.....	Boone
Higdon, Robert Absalom... ..	Clifton City..	Pettis.....
Houston, Jas. Samuel Montgomery.	Raymore	Cass
Johnson, Edward Reade.....	St. Louis City.....	.....
Jones, Seebert Granberry.....	Southwest City...	McDonald.....
Joslyn, Otis Wilbra	Whiting	Mississippi..
Killam, Oliver Winfield.....	Winfield	Lincoln.....
Kirk, Robert Lawrence.....	Jefferson City.....	Cole.....
Kitt, Paul Duane.....	Chillicothe	Livingston ..
Klepper, Frank B.....	Lathrop	Clinton
Lyons, Martin Peter.....	Marshall.....	Saline.....
Madden, Ira Gilbert.....	Powersville	Putnam.....
MacBride, Jno. Leslie Ffennell.....	Nevada	Vernon
McKnight, Jas. Columbus LaFayette	Forsyth.....	Taney.....
Nebel, John Vincent.....	High Hill.....	Montgomery ..
Owen, Jesse Mordecai.....	Fulton	Callaway.....
Paxton, Charles Flagg.....	Centralla	Boone
Phillips, Everett Eugene.....	Savannah	Andrew
Plowman, John Lawrence.....	Hannibal.....	Marion
Powell, Ernest Bell.....	Longwood.....	Pettis
Robinson, Edward Nelson.....	Rockville	Bates
Ryland, Leonard Gamble.....	Lexington.....	Lafayette
Schwabe, James Webster.....	Columbia.....	Boone
Shepherd, Edward Lee	Joplin	Jasper.....
Shultz, Orrillis Edward.....	McFall.....	Gentry.....
Sidebottom, Earl Easley.....	Santa Fe, N. M. ....	.....
Stafford, Frank Wilson.....	London	Atchison
Thompson, Guy Atwood.....	Pattonville.....	St. Louis
Thurston, Walter Alonzo.....	Columbia.....	Boone
Tiedemann, John Ernest.....	Jackson.....	Cape Girardeau ..
Turner, Martin Ernest.....	Columbia.....	Boone
Walkup, Frank Havey.....	Sedalia.....	Pettis
White, Crawford Elder.....	Columbia.....	Boone.....
Wilkson, Charles Plinckney.....	Bonne Terre.....	St. Louis
Willhite, Joseph Vance.....	Oxford.....	Worth

—54

JUNIOR CLASS.

Armstrong, Hugh C.....	Neosho.....	Newton.....
Barnes, Clarence Abel.....	Mexico.....	Audrain
Barth, Irvin Victor.....	Columbia	Boone.....
Birmingham, George Francis.....	Kansas City.....	Jackson
Bishop, Earl Jacob.....	"	"
Bissett, Clyde Aigner.....	Springfield	Greene
Blanton, Harry Bain.....	Columbia	Boone
Broughton, Allen Tisdell.....	Hardin.....	Ray.....
Callow, Lee.....	Oregon.....	Holt
Carr, William Christmas.....	Lee's Summit.....	Jackson
Coppedge, Adam Vanburen.....	Everton	Dade.....
Corbett, Samuel Jefferson.....	New Madrid.....	New Madrid.....
Cotter, William Earnest.....	Knox City.....	Knox
Crook, James Edwin.....	Roscoe.....	St. Clair.....
Cunningham, Lieutellus.....	Fair Play.....	Polk
Davis, Frank Ashbury.....	St. Joseph.....	Buchanan
Davis, James Addison.....	Strasburg	Cass
Dearing, John Tilman.....	Queen City.....	Schuyler.....
Doll, Ernest Easton.....	Hamilton.....	Caldwell.....
Eaves, James Frank.....	Salem.....	Dent
Edwards, Luther Hollis.....	Columbia.....	Boone.....
Elvins, Politte.....	Doe Run.....	St. Francois.....
English, George Harrison, Jr.....	Kansas City.....	Jackson.....
Ferrell, Corry Craig.....	Halleck.....	Buchanan.....
Gardner, Preston Edwin.....	Nevada	Vernon
Gladney, Albert Caldwell.....	Auburn.....	Lincoln.....
Goodson, Walter Conrad.....	New Cambria.....	Macon.....
Hargus, Jesse Calvin.....	Roscoe.....	St. Clair.....
Harris, Spencer Francis.....	Rich Hill.....	Bates

List of Students

181

Name.	Postoffice.	County.
Hock, William Casper.....	Buckner.....	Jackson.....
Hockaday, Edwin Temple.....	Plattsburg.....	Clinton.....
Jack, Otle Addison.....	Camden Point.....	Platte.....
Jennings, William Olin.....	Columbia.....	Boone.....
Jones, Francis Price.....	Versailles.....	Morgan.....
Knoop, Amos Albert.....	Stover.....	".....
Maxwell, William Robert.....	Columbia.....	Boone.....
Mety, Charles Paxson.....	Memphis.....	Scotland.....
Mosman, Burroughs Norton.....	St. Joseph.....	Buchanan.....
Murrel, Charles Earnest.....	Lancaster.....	Schuyler.....
McEuen, Wilson Henry.....	Lamar.....	Barton.....
McIntyre, Joe Shelby.....	Mexico.....	Audrain.....
Olvis, James Edward.....	Beverly.....	Platte.....
Peak, John Lee.....	Midway, Ken.....	".....
Pickell, Ralph Miller.....	Hamilton.....	Caldwell.....
Prettyman, Charlie Edward, Jr.	Neosho.....	Newton.....
Pulliam, William Spencer.....	Grayson.....	Clinton.....
Rippey, John Denise.....	Lawson.....	Ray.....
Robertson, Frederick Phillip.....	Lathrop.....	Clinton.....
Robertson, Alvin.....	Clarksburg.....	Moniteau.....
Robinson, Clark.....	Deer Park.....	Boone.....
Russell, Antoine Edward.....	Savannah.....	Andrew.....
Schofield, Madison Connell.....	Hannibal.....	Marion.....
Simmons, John Milton.....	St. Joseph.....	Buchanan.....
Simon, Charles George.....	Memphis.....	Scotland.....
Smith, Harry William, Jr.....	Elizabeth, N. J.....	".....
Smith, Philip Augustus.....	Columbia.....	Boone.....
Wagner, George Ernest.....	Middletown.....	Montgomery.....
Wallace, James Samuel.....	Maud.....	Shelby.....
Wallace, William Walker.....	".....	".....
Watson, Clem Lloyd.....	Wakenda.....	Carroll.....
Wilkerson, George Rappeen.....	Sedalia.....	Pettis.....
Willhite, Amma Zilla.....	Oxford.....	Worth.....
Willhite, Ethel Blanche.....	".....	".....
York, Miner Manasseh.....	Lapore, Texas.....	".....
Zimmerman, Henry Morton.....	Moons, Ohio.....	".....
Zwick, Galins Lawton.....	Bucklin.....	Linn.....
SPECIAL STUDENTS.		
Bear, Hugh Morris.....	Tipton.....	Moniteau.....
Gordon, Miles Fleetwood.....	Columbia.....	Boone.....
Hill, Adam.....	Independence.....	Jackson.....
Mahoney, John Patrick.....	LaGrange.....	Lewis.....
McIndoo, William Oliver.....	Liberal.....	Barton.....
Steinkamp, William Deitrich.....	St. Louis City.....	".....
Tomlinson, Robert Lee.....	Atchison, Kan.....	".....

—66

—7

Medical Department.

Name.	Postoffice.	County.
Allen, Francis Withers.....	Barryville.....	Macon.....
Bass, Andrew Jackson.....	Columbia.....	Boone.....
Berkebile, Lewis.....	".....	".....
Blanton, Charles Irvin.....	".....	".....
Blank, James Parker.....	Bradleyville.....	Taney.....
Broderick, David Edward.....	Kansas City.....	Jackson.....
Burruss, Will Bledsoe.....	Columbia.....	Boone.....
Cannell, Charles.....	Hatton.....	Callaway.....
Clark, Manuel Thomas.....	Columbia.....	Boone.....
Coffey, Grundy Cockrill.....	Platte City.....	Platte.....
Cottingham, Thomas Bartlett.....	Clark.....	Randolph.....
Evans, Edwin Elgin.....	Meadville.....	Linn.....
Fisher, James Montgomery.....	Columbia.....	Boone.....

Name.	Postoffice.	County.
Frazer, Roy Thomas.....	Commerce.....	Scott.....
Gentry, James Holland.....	Boonville.....	Cooper.....
Gordon, Reverdy Johnson.....	Columbia.....	Boone.....
Harvey, Frank Leslie.....	Lincoln.....	Benton.....
Hockaday, Carl Vincent.....	Columbia.....	Boone.....
Holman, Jurney Hubert.....	Hartford.....	Putnam.....
Hoover, Frederick William.....	Harrisonville.....	Cass.....
Hubbard, William Marvin.....	Clark.....	Randolph.....
Hutton, William Shelley.....	Commerce.....	Scott.....
Irwin, Fletcher DeWitt.....	Maryville.....	Nodaway.....
Johnson, Hans Christian.....	Meadville.....	Linn.....
Kerr, Walter Cunningham.....	Molino.....	Audrain.....
Lester, Wiley Franklin.....	Marionville.....	Lawrence.....
Lillard, Alonzo Conduit.....	Columbia.....	Boone.....
Marshall, Archie Maupin.....	Molino.....	Audrain.....
*May, Hubbard Clyde.....	Charles City, Ia.....	.....
Mikel, Henry Frank.....	Columbia.....	Boone.....
Munday, Bert.....	Canton.....	Lewis.....
McGaugh, Elmer T.....	Richmond.....	Ray.....
Norvell, James Robert.....	Columbia.....	Boone.....
Norwood, Frank Henderson.....	".....	".....
Overton, Charles Henry.....	Mt. Vernon.....	Lawrence.....
Park, Clarence Linwood.....	Arrow Rock.....	Saline.....
Parmer, Charles Chandler.....	Columbia.....	Boone.....
Reynolds, William Hamilton.....	Vermont.....	Cooper.....
Risley, Chester Howard.....	Cameron.....	Clinton.....
Rutherford, Henry Holcomb.....	McAlester, I. T.....	.....
Scrivener, Douglas Scott.....	Columbia.....	Boone.....
Searcy, Anna Beauregard.....	Woodlawn.....	Monroe.....
Shaefer, Harry Irving Lewis.....	Columbia.....	Boone.....
Statler, Will Kennett.....	Oakridge.....	Cape Girardeau.....
Tilley, Robert Bruce.....	Waynesville.....	Pulaski.....
Turner, John William.....	Hallsville.....	Boone.....
Vaughan, Benjamin Warren.....	Urbana.....	Dallas.....
Wilcoxon, Thomas Hurley.....	Ashley.....	Pike.....
Wren, James Andrew.....	Sturgeon.....	Boone.....

*Left before matriculating.

College of Agriculture and Mechanic Arts.

A. SCHOOL OF AGRICULTURE.

Name.	Post office.	County.
FOURTH YEAR.		
Lewelling, Walker Williams.....	High Hill.....	Montgomery.....
McDermott, Joseph Lewis.....	Buckner.....	Jackson.....
THIRD YEAR.		
Dix, Mary Dixie.....	Jefferson City.....	Cole.....
Maloney, John Cornelius.....	Cretcher.....	Saline.....
Roberts, Guy Alexander.....	St. Joseph.....	Buchanan.....
Welch, James William.....	Peace Valley.....	Howell.....
SECOND YEAR.		
Howard, Walter Lafayette.....	Griffin.....	Christian.....
Lipscomb, Millard Lewis, Jr.....	Columbia.....	Boone.....
Newton, Ivie Wilmer.....	High Point.....	Moniteau.....
Powell, William Edward.....	Columbia.....	Boone.....
White, James David.....	".....	".....
Winchester, Luther.....	Sikeston.....	Scott.....

Name.	Postoffice.	County.
FIRST YEAR.		
Aldredge, Lou Randolph.....	Latham.....	Moniteau.....
Anderson, William Baird	Camden Point.....	Platte.....
Archibald, Claude Thomas	Carrollton.....	Carroll
Arnold, Samuel Washington	Energy	Schuyler.....
Balthis, Frank Keffer	Des Moines, Ia.....	.....
Barr, Floyd	Pineville	McDonald
Braun, Frederick August	Raytown	Jackson
Burris, Harold Jefferson.....	Warrensburg	Johnson
Burt, Charley Elmer	Auxvasse.....	Callaway.....
Burton, Samuel Harrison.....	Capps.....	Miller.....
Coats, Charlie Clinton ..	Agency.....	Buchanan ..
Coleman, William Tyler.....	Monarch.....	St. Louis.....
Coleman, Robert Eugene	"	"
Cowley, Benjamin Franklin. .	Cowgill	Caldwell
Dickerson, George Luther.....	Livonia.....	Putnam
Doak, Thomas Coffeen.	Kirkwood.....	St. Louis.....
Elling, Martin Edward.....	Concordia.....	Lafayette
Garth, William Walter, Jr.	Columbia.....	Boone.....
Gibson, Paul H.	Elsberry.....	Lincoln.....
Gottfried, Charles Frederick, Jr ..	Springfield.....	Greene
Ham, Joel Walter.....	Verona	Lawrence
Hayes, Lottie May.....	Columbia.....	Boone.....
Jackson, Carrie Ruth.....	Chillicothe.....	Livingston.....
Kline, Grace	Bismarck	St. Francis.....
Kuhs, William.....	St. Louis City.....	.....
Lentz, John William.....	Lake City.....	Jackson
Lester, Wesley	Orange	Lawrence
Loughran, John, Jr.	St. Louis City.....	.....
Lushbaugh, Erith Evert.....	Fair Play.....	Polk.....
Luthy, James.....	Lebanon	Laclede.....
Lynch, John Gratton.	Goldman.....	Jefferson
Macom, John Nicholas.....	Poplar Bluff.	Butler
Moody, Oscar D.	Columbia.....	Boone
Mott, Robert Edmund.....	New Madrid.....	New Madrid.....
Moyer, Charles Edmond.....	Bailey	Pulaski.....
Muehlemann, Carl Eugene.....	St. Louis City.....	.....
Mullinix, Frederick Charles.....	Willow Springs.....	Howell
Parker, Robnett Prewitt.....	Columbia.....	Boone.....
Ramsey, Thomas Orrin	Revere	Clark
Rickey, John Wesley	Columbia.....	Boone.....
Smith, Warren Emmett.....	"	"
Stacy, William Alfred	New Madrid.....	New Madrid.....
Steele, Oliver Lee.....	Ladonna	Audrain
Sterrett, George Washington.....	Victor.....	Monroe.....
Thorp, Egbert.....	Weston	Platte
Trimble, Bert Lee.....	West Plains.....	Howell
Trimble, John Franklin	"	"
Young, Phylander Hilland	Marshall.....	Saline
SPECIAL STUDENTS.		
Bolm, Edward William.....	Truesdale.....	Warren.....
Douthett, Paul.....	St. Louis City.....	.....
Naylor, George Washington.....	Maud	Shelby.....
SHORT WINTER COURSE IN AGRICULTURE.		
Black, Ernest Eugene.....	Butler.....	Bates.....
Carmean, Luther	Elmwood	Saline
Clark, George Ezra.....	Appleton City.....	St. Clair.....
Coulter, John Ernest.....	Elmwood.....	Saline
Daniels, Frank Anderson.....	Vandalla	Audrain.....
Foster, Charles Milburn	Merriam, Kan.....	.....
Fry, Oscar Emery.....	Needmore.....	Greene.....
Goodrich, Stephen James.....	New Haven.....	Franklin.....
Goodson, William Hammack	New Cambria.....	Macon

Name.	Postoffice.	County.
Gordon, Arch Blake.	Stotesbury	Vernon
Holtgrave, Martin Gerhard..	Breese, Ill.....	.....
James, Lee Washington....	Leeton.	Johnson
Keyes, Archie Abercrombe.	St. Louis City....	.....
Kuhs, William.....	" .....	.....
Lewis, Bert Veasy.	Bethany.	Harrison
Lightner, Thomas Christopher	Urbana ..	Dallas
McElhiney, Irvin Monroe..	Queen City	Schuyler.....
Parker, Robnett Prewitt.....	Columbia	Boone.
Petermeyer, Joseph John.....	Breese, Ill....	.....
Recklein, William.....	St. Louis City....	.....
Reld, Robert Phillip	Hallsville....	Boone.
Ridings, George Voorhees	Cairo.	Randolph
Siegenthaler, Godfrey	Goodwin, Ohio ..	.....
Smith, Harry H.	Carthage ...	Jasper
Tallman, Clarence Leon.....	Winegan	Sullivan.....
Vogt, Ferdinand.....	Comfort, Texas...	.....
Waful, Sherman, Jr.	Lathrop..	Clinton..
Wassell, Harry Frank.....	Barry, Ill.....	.....
Weatherman, Albert Oly.....	Stanberry..	Gentry ..
Weber, Franz	Bloomfield	Stoddard.....
Wren, Bert.	Bethany	Harrison.....
SHORT WINTER COURSE IN HORTICULTURE.		-31.
Asdel, Theodore Tillison..	Cherryvale, Kan.	.....
*Hetherington, John Smith.....	Kansas City.	Jackson
Hetherington, Emma Voelcker	"	"
Hoag, William Bert.....	Mountain Grove..	Wright
Hulen, David Marion.....	Hallsville ..	Boone
Koch, Albert Adelbert..	Creve Cœur.	St. Louis.....
Tuttle, Lewis William ..	Adrian	Bates
		-7.

*Deceased.

D. SCHOOL OF ENGINEERING.

Name.	Course	Postoffice.	County.
SENIOR CLASS.			
Broadhead, Garland Carr, Jr..	C. E.	Columbia....	Boone.
Cox, Elza Allison..	"	Rutledge	Scotland.....
Hansen, Karl Henry.....	E. E.	Harlem.....	Clay.
Hogan, Charles William..	"	St. Louis City....	.....
Jones, Edward Horace.	C. E.	Parnell.	Nodaway.....
Marbut, Thomas Benton..	"	McDowell	Barry
Moore, Frank Lawrence....	"	Carthage....	Jasper
Rhett, Albert Haskell.	E. E.	Mt. Wash'ton, Md	.....
Turner, William Henry	O. E.	Centralla.....	Boone.....
			-9.
JUNIOR CLASS.			
Brandt, Albert Upp.....	E. E.	Nevada	Vernon.....
Corrigan, George Washington.	O. E.	Harrisonville ..	Cass.....
Franz, Walter Godfrey....	M. E.	St. Louis City....	.....
Freudenberger, William K. ..	E. E.	Clarksburg.	Moniteau.....
Griggs, Austin B	C. E.	Hedge City... ..	Knox.....
Irvine, George Andrew....	E. E.	Marshall.....	Saline.
Kelth, Charles Whiteside.....	C. E.	St. Louis City ..	.....
Lewis, Loyd..	E. E.	Oregon.....	Holt.....
Maitland, George Forrest.....	C. E.	Richmond	Ray
Maughmer, Carl ..	"	Kearney	Clay
Morris, James Washington....	"	Richmond.....	Ray.
Morse, Henry Simmons.....	M. E.	Warrenton.	Warren.....

List of Students

185

Name.	Course	Postoffice.	County.
Neville, Colonel Will Jackson..	C. E.	Marshall	Saline
Pinkley, Roy Henry.	E. E.	Chillicothe.....	Livingston.....
Robinson, Ralph Waldo.....	"	Kahoka..	Clark
Rodgers, James Leigh.	M. E.	Boonville	Cooper..
Terrill, Adolphus Centimus ...	C. E.	Macon...	Macon.....
Weatherly, Everett Pine	"	Columbia...	Boone.
-18			
SOPHOMORE CLASS.			
Bickley, Ross Moore.....	M. E.	Mexico..	Audrain.....
Blackwell, Paul Alexander ..	C. E.	Columbia.	Boone.
Crenshaw, Smith S.	"	Springfield.....	Greene.....
Daugherty, Bede Allen.....	"	Leemon	Cape Girardeau..
Gaines, Edward O	E. E.	Slater.	Saline... ..
Gans, Roy Carl	C. E.	Columbia.....	Boone.
Lyman, Forest Shepard.....	E. E.	Westport.....	Jackson
Marshall, Urban Serenus.....	"	St. Joseph	Buchanan.. ..
Melara, Policarpo.....	C. E.	Juticalpa, C. A..	.....
Peper, Elmer Carl.....	E. E.	St. Louis City....	.....
Shellenberger, Ira Oscar.....	"	Mound City.	Holt
Underhill, Dillen.....	M. E.	Lineville, Iowa...	.....
Wilson, James Newton.....	"	Molino	Audrain
-18			
FRESHMAN CLASS.			
Bond, Judson Baker... ..	C. E.	Victor, Mont.....	.....
Cooper, Isaac Benjamin.	"	Columbia	Boone
Cope, Ralph Palmer.....	E. E.	Kingston	Caldwell.....
Dearing, Frederick Maurice...	C. E.	Columbia.....	Boone
Doyle, Harry Sisson.....	E. E.	Sedalia.	Pettis.
Duncan, Frederick Austin. ...	M. E.	Columbia.....	Boone
Fry, Leslie Monroe.....	C. E.	Tipton	Moniteau.....
Groves, James Fletcher, Jr....	"	Corder	Lafayette.....
Hauser, Orville Rice	E. E.	Richmond	Ray
Hedgpeth, Milam Henry.	"	Rockport.....	Atchison.. ..
Hollway, William Watson.....	M. E.	"	"
Lanning, John Henry	C. E.	Ste. Genevieve... Ste. Genevieve...	.....
Liggett, Ernest Cuthbert.....	E. E.	Wheatland.....	Hickory.
Martin, Morton Robinson	"	Oregon..	Holt... ..
Mudd, Don Alexis	C. E.	Montgomery.. ...	Montgomery ...
O'Rear, Lenoir Wilkes.....	E. E.	Columbia	Boone
Pierce, Lonnie John	"	Rockport.....	Atchison.
Powers, Joe.....	C. E.	Paris	Monroe
Ruffner, Charles Shumway ...	E. E.	Palmyra	Marion
Shepard, Edward Lewis	C. E.	Joplin.	Jasper
Sloan, James Craig.....	"	Cameron	Clinton
Smith, Edwin Dwight.	E. E.	Maitland	Holt
Thomas, Claude Holden.....	C. E.	Albany	Gentry
Troy, George Conrad.....	"	Slater.	Saline
Wilcox, Frank Leslie.	E. E.	Columbia.....	Boone.....
Winter, William Neal.....	"	Greenville, Miss. ....	.....
-26.			

School of Mines.

Name.	Course	Postoffice.	County.
GRADUATE.			
E. C. Blerbaum, B. S. (Iowa Ag. College,	C.&M.	Monona, Iowa...	.....
G. W. Dean, B. S.	"	Rolla.	Phelps.....
-2			

Name.	Course	Postoffice.	County.
SENIORS.			
Barker, Ralph.....	M. E.	Chicago, Ill .....	.....
Gottschalk, Victor Hugo.....	C.&M.	St. Louis City.....	.....
Terrell, Arthur Davis.....	C. E.	Holden	Johnson
Torrence, Euart Carl.....	"	Pocahontas	Cape Girardeau
—4			
JUNIORS.			
Bowman, Wade Walbridge ...	M. E.	Lebanon..	Laclede.....
Cardenas, Francisco	"	Monterey, Mex.. ..	.....
Chamberlain, Santiago. ....	"	" .....	.....
Clark, George Clough	"	Leadville, Col .....	.....
Fernandez, Abraham.	"	Monterey, Mex.. ..	.....
Hatchett, Roger Hanson.....	C.&M.	New Florence.....	Montgomery.....
Illinski, Alexis Xavier.....	M. E.	East St. Louis, Ill. ....	.....
Jamison, Claude Eagan	C. E.	Rolla	Phelps
Koeberlin, Fred. Richard	M. E.	Freeburg, Ill.....	.....
Perkins, Edw. Thompson	"	Kansas City	Jackson.....
Perkins, Fred. Hough	"	"	"
Regel, Ferd. Hermann.....	"	St. Louis City.....	.....
Rogers, Herbert Fordyce.	"	Holden	Johnson.. ..
Schulze, Hermann Otto	"	Vetschau, Ger... ..	.....
Soest, Walter Ernest.....	C.&M.	Rolla	Phelps
Tayman, Francis Joseph.	C. E.	Lebanon	Laclede.
Underwood, Jerrold Roscoe ...	M. E.	Kansas City	Jackson
Walker, John E.	C. E.	Vichy.....	Maries.....
—19			
SOPHOMORES.			
Bland, Harry Osmond.....	C. E.	St. Louis City.....	.....
Coffer, Robert Henry.....	"	Savannah	Andrew
Connor, Naisi Aini.....	M. E.	New York City.....	.....
Creveling, DeWitt	C. E.	Clayton.....	St. Louis
Drennan, Ralph W. W.....	M. E.	Kansas City.....	Jackson
Elkins, John T.	"	"	"
Fach, Charles Albert.....	C. E.	St. Louis City .....	.....
Fraizer, Isaac Peter.....	"	Rolla	Phelps.....
Garcia, John Adrian	M. E.	St. Louis City .....	.....
Graeser, Henry Jacob.....	"	Stratman.	St. Louis
Krull, Oliver William.	C. E.	Kansas City.....	Jackson
Keene, Claude E.	M. E.	New York City.....	.....
Leivy, Pasha Benj.....	C. E.	East St. Louis, Ill. ....	.....
Lund, Robert Ranons.....	M. E.	White Oaks, N.M. ....	.....
Niles, Claude Asa.....	C. E.	Rolla	Phelps
Ollis, Fred. Weld....	M. E.	Springfield.	Greene.
Rolufs, Rulof Theo	C. E.	Vest	Phelps
Selfert, Charles George.	"	Joplin.	Jasper.....
Taylor, Howard Joshua	"	Lentner.....	Shelby
Trotter, James F.	M. E.	Carrollton.. ..	Carroll
Villareal, Francisco.....	"	Monterey, Mex.. ..	.....
Weigel, William Melvin.....	"	Memphis, Tenn.. ..	.....
—22			
FRESHMEN.			
Baldrige, Harry Alexander..	M. E.	Willow Springs..	Howell.....
Barry, Paul Augustine.....	C.&M.	Ft. Riley, Kansas..	.....
Brucher, Louis N.	M. E.	Rolla.....	Phelps
Buckby, DeWard Wilson.	"	Philadelphia, Pa. ....	.....
Cartwright, Rufus V.....	"	Van Alstyne, Tex. ....	.....
Cook, Louis Daniel	"	Rolla.....	Phelps
Cooper, Walter Clark.	C. E.	"	"
Curtis, Leslie Virgil.....	C.&M.	"	"
Dickinson, Forest R.	M. E.	Detroit, Mich.....	.....
Donahoe, Daniel Francis.....	"	Rolla	Phelps.....
Draper, James Clark	"	Lebanon.. ..	Laclede.....
Ellzondo, Julian Canuto.. ..	"	Monterey, Mex... ..	.....
Gonzalez, E. luardo .....	"	" .....	.....
Hanley, Herbert Russell.....	"	Winamac, Ind.....	.....

List of Students

187

Name.	Course	Postoffice.	County.
Hannah, Harry Dalton.....	M. E.	Greenton	Lafayette.
Harrison, Edmond Carroll.....	O & M	Rolla.....	Phelps
Henderson, Lester L.....	M. E.	VanAlstyne, Tex. ....	.....
Higgins, Louis Leslie.....	"	Leeton.....	Johnson
Hollow, George Odo.....	"	Cuba.....	Crawford.....
Johnson, William J.	"	Rolla.....	Phelps
Luther, Walter Adams.....	"	St James.....	"
Martinez, Carlos E ..	"	Saltillo, Mex. ....	.....
Reid, John Weir.	"	Memphis, Tenn..	.....
Shaw, Hiram Miller.....	"	Rolla	Phelps
Southgate, James M.....	"	"	"
Walker, Dix.	C. E.	Oak Ridge	Cape Girardeau..
Wallace, Hubbe R.	M. E.	Webb City.....	Jasper
Weldner, Frank.....	"	Dixon.	Pulaski... ..
Yonge, Allen M.....	"	S'nta B'rb'ra, Cal	.....

—29

Name.	Postoffice.	County.
SPECIALS.		
Barber, Frank Sturns, C. & M.....	Kansas City.	Jackson
Beall, Sarah, Math. & Physics	"	"
Botts, Walter J., Chem.....	Los Angeles. Cal...	.....
Bryan, Guy, C. & M.	St. Louis City.....	.....
Chamberlain, Louis John, Chem	Rolla.....	Phelps.. ..
Cook, Edwin Wallace, Geology	Lebanon.....	Laclede.....
Cooper, Charles Noble, Math. & Sci.	Veasman.....	Maries
Cowles, Frederick R., Math. & Phys.	Kansas City	Jackson
Crispin, Michael W., C. & M	Richmond.	Ray.....
Davis, Ira W., Geology	Lebanon	Laclede.
Groves, Virgil Petzer, C. & M.	Springfield.....	Greene.. ..
Hasler, Thomas Allan, Assaying	"	"
Herndon, James Archibald, C. & M.	Lebanon ..	Laclede.....
Launtz, William Francis, Assaying.	East St. Louis, Ill	.....
McCutchen, John Tucker, Math. & El.	Sheldon.	Vernon.. ..
Norman, Samuel J., Assaying.....	St. Louis City .....	.....
Phillips, Daniel Milton, C. & M.	Capioma, Kan.....	.....
Wilkins, Elinor M., Math. and Sci..	Rolla.....	Phelps
ACADEMICS.		
Brene, Flora Sarah.....	Rolla.....	Phelps ..
Brene, Nellie Augusta	"	"
Burge, Edyth' D.....	St. James.....	"
Cox, Katherine.....	Rolla.....	"
Dickerson, Bessie M....	"	"
Gower, Christopher Columbus.	"	"
Groover, Clara	Newburg	"
Heller, Miriam	Rolla.	"
Huffman, Alfred Marcus.....	Lecoma.....	Dent
Hunt, James William	Lenox	"
Hutchison, Leslie.	Rolla.....	Phelps.....
Knapp, Arthur Benjamin	"	"
McCaw, John Milton.....	"	"
Mitchell, Phelps.	"	"
Morgan, John Henry	"	"
Nemnich, Otto Henry	Florissant.....	St. Louis
Powell, Frances M	Rolla.	Phelps
Scott, Ethel Mae.....	"	"
Scott, Dennis	"	"
Scott, Lewis Lawrence.....	"	"
Tayman, George Harvey.	Lebanon.. ..	Laclede.....
Turner, Elbert Lafayette.....	"	"

—22

Summer School of Science.

(B=Biology; P=Physics; S=Shopwork; H=Horticulture.)

Name.	Studies.	Postoffice.	County.
Alexander, Lily M.	B	Kahoka.	Clark
Bohnet, Mrs. Gussie Wulfert.	P	Kansas City	Jackson
Borggraeve, Alfreda	"	St. Louis City .....	.....
Brown, Hugh Ernest.	B	Brown's Station.	Boone.
Bruton, Arthur	P	Centralla.	"
Bulkley, Henrietta.	"	Higginsville	Lafayette.
Burgess, Julia Goyer.	B	Columbia	Boone.
Caldwell, Myrtle Wood. . . .	P	Warrensburg.	Johnson
Carrington, William Thomas.	B	Springfield.	Greene.
Cochel, Wilber Andrew.	S	Columbia	Boone
Coffing, Lucas Riley.	B S & H	Bridgeton.	St. Louis.
Crumbaugh, Lucy Cornella. .	H & S	Columbia	Boone
Dearmont, Washington S. . .	B	Kirkwood	St. Louis.
Dorsey, Annie.	"	Springfield.	Greene.
Duff, Alexander Wallace. . . .	"	Pleasant Hill. . . .	Cass.
Elliott, Edwin.	B S & H	Perry	Ralls
Evans, George Hampton.	B	Norborne.	Carroll
Fisher, Emerson Callaway. . .	P	Warrensburg .. .	Johnson
Flood, Sallie Rochester.	H & S	Columbia.	Boone
Glasgow, Roy.	B	Lamar.	Barton
Graves, Lula	H & S	Woodlandville. . .	Boone
Graves, Lucy Mildred.	P	Montgomery City	Montgomery.
Green, Harry Lincoln.	"	Sturgeon.	Boone
Grim, Ezra Clarence	B	Kirksville	Adair
Hall, Frank Johnson.	B	Kansas City.	Jackson
Harlow, Victor E.	B	LaGrange	Lewis.
Higdon, William D.	"	Lamar.	Barton.
Hubbard, Arah Hamilton.	"	Centralla.	Boone.
Humphreys, James Clarence. .	"	Fulton.	Callaway.
Hunt, Jacob	"	Paris.	Monroe
Jackson, Carrie Ruth.	"	Chillicothe.	Livingston.
James, William Hawkins.	B S & H	Columbia.	Boone.
Jamison, Mary Elizabeth.	P	"	"
Jesse, Richard Henry.	B & S	"	"
Jones, John Alexander.	B & P	Centralla.	"
Lamb, Charlie.	"	Cairo.	Randolph.
Lipscomb, James Robinson. . .	B & S	Columbia.	Boone.
Lowe, Emery Condron.	H & S	Jerico.	Cedar.
Lowe, James Angus.	P	"	"
McKnight, Maud.	"	Tarkio.	Atchison
Marston, Hattie.	B	Wheatland.	Hickory
Mikel, Henry.	P	Columbia.	Boone.
Moore, Joseph Rockefeller. . .	"	Union.	Franklin.
Munday, Bert.	"	Canton	Lewis.
Nelson, Lewis Milton.	"	Nelson.	Saline.
O'Hallaron, Katheryn.	R & H	St. Louis City. . . .	.....
Peacock, Mrs. Bettie Werden. .	H & S	Independence.	Jackson
Petree, McDonald.	B & P	Kirksville	Adair.
Potter, Peter.	B	Springfield.	Greene.
Rex, Louise Bartlett.	"	Kahoka.	Clark
Richardson, Burt Parker.	P	Springfield.	Greene.
Rocheford, Julia.	B	Columbia.	Boone.
Rodhouse, Thomas Jacob.	B & P	Mexico.	Audrain
Rouse, Birdie Laforce.	H	Brown's Station.	Boone
Row, David Otto.	B & P	Columbia	"
Rowley, Robert	B	Louisiana	Pike
Scott, John William.	B & P	Canton.	Lewis.
Shaefer, Harry Irving Lewis. .	P	Columbia	Boone
Shaefer, Jean Augusta. . . .	B	"	"
Sheppard, Charles C.	B & P	Grandin	Carter
Sherry, S. Toledo	B S & H	Cottleville.	St. Charles.
Shipley, Edith.	H	Columbia	Boone
Spohrer, Frank Otto	B & S	Fredericksburg. . .	Gasconade

Name.	Studies.	Postoffice.	County.
Steele, Mary Isabel.	B	Laddonia.	Audrain
Stoll, Caroline F.	H & S	Independence.....	Jackson
Strong, Charles Monroe.....	B & P	Stotesbury	Vernon
Tracey, Nannie	B	Springfield	Greene
Turner, Edwin	"	Wellsville	Montgomery.
Wauchope, Joseph Alleine...	"	Hampden-Sidney, Va	.....
Weatherly, James Edward..	P	Columbia.....	Boone
Weatherly, Everett Pine. ...	S	"	"
Winchester, Frank.	P	King City..	Gentry
Winders, James Calvin.	B	Jessamine	Balls
Wirt, Arthur Augustus.....	B & P	Belton	Cass
Woodson, William Irvin	P	Stoutsville.....	Monroe
Wulfert, Margaret Anne	"	Columbia.	Boone

—76

Ladies, 27; men, 49. (Biology, 45; Physics, 30; Shopwork, 15; Horticulture, 13.)

SUMMARIES.

I. Enrollment in Academic Studies.

(a) Columbia.			
English.....	303	Mathematics ..	843
Latin	124	Astronomy .. .	22
Greek.. ..	75	Physics	156
Classical Archæology..	51	Chemistry	162
Romance Languages.	153	Geology and Mineralogy	66
Germanic Languages.....	157	Biology	112
History and Political Economy...	189	Elocution.....	90
Philosophy.....	82		
(b) Rolla.			
Mathematics.....	93	English	49
Chemistry	65	Modern Languages	37
Physics.....	70		

II. Enrollment in Technical Studies.

(a) Columbia:			
Bacteriology	7	Physiology.. ..	31
Drawing	66	Entomology.	43
Shop-work	125	Book-keeping and Stenography..	86
Veterinary Science.....	37	Horticulture	52
Agriculture.. ..	94	Pathology.....	20
		Pedagogy	65
(b) Rolla:			
Drawing... ..	65	Physical Laboratory.....	35
Shop-work.....	24	Chemical Laboratory.....	69
Mining and Metallurgy.....	45	Engineering	65

III. Enrollment in Departments.

I. GRADUATE:		VIII. A. AND M. COLLEGE,	
Total.....	23	(a) Agriculture:	
II. ACADEMIC:		Fourth Year	2
Seniors	30	Third Year	4
Juniors	43	Second Year	6
Sophomores	29	First Year	45
Freshmen	78	Specials	3
Specials	27	Short Course (Agriculture) ...	31
Irregular	34	Short Course (Horticulture) ..	7
Total.	241	Total.....	101
III. NORMAL:		(b) Mechanic Arts.....	125
Regular	36	(c) Engineering:	
Teachers ..	29	Seniors	9
Total.....	65	Juniors	15
IV. LAW:		Sophomores.....	13
Seniors	54	Freshmen	26
Juniors	66	Total.....	66
Specials	7	IX. SCHOOL OF MINES (ROLLA):	
Total	127	Graduates.....	2
V. MEDICAL		Seniors ...	4
49		Juniors ..	15
VI. MILITARY SCIENCE AND TAC-		Sophomores.....	22
TICS.....	189	Freshmen..	29
VII. ELOCUTION.....		Specials ..	15
86		Academics.....	22
		Total.	115

IV. Enrollment in Academic Courses.

	A. B. B. L. B. S.		
Seniors	13	13	4
Juniors	19	21	3
Sophomores ..	13	15	2
Freshmen	22	45	12
Totals.	67	94	21

V. Enrollment in Engineering Courses.

(a) Columbia:		(b) Rolla:	
Civil Engineering.....	32	Mining Engineering.....	49
Mechanical Engineering.....	8	Civil Engineering.....	15
Electrical Engineering.....	26	Chemistry and Metallurgy.....	8
		Special—(Tech. and Sci.).....	15

VI. Students Working in Gymnasium.

Young Men.....	150	Young Women.....	18
----------------	-----	------------------	----

VII. Young Men and Young Women.

(a) Columbia:			
Regular session:		Summer School of Science:	
Young Men.....	527	Young Men.....	49
Young Women.....	98	Young Women.....	27
(b) Rolla:			
Men.....	104	Women.....	11
Total, Young Men.....	680	Total, Young Women.....	136

Number of Individual Students..... 816

VIII. Total Enrollment.

Graduates.....	23
Academic.....	242
Law.....	127
Medical.....	49
Normal.....	65
A. & M. College:	
1. Agriculture.....	94
2. Horticulture.....	7
3. Engineering.....	66
School of Mines.....	115
Summer School of Science.....	76
Total.....	841
Names counted twice.....	25
Total number of individual students.....	816
Total number at Columbia.....	701
Total number at Rolla.....	115

IX. Counties Represented in the University.

Adair.....	4	Crawford.....	3
Andrew.....	5	Dade.....	4
Atchison.....	7	Dallas.....	2
Audrain.....	17	Davless.....	2
Barry.....	1	Dent.....	4
Barton.....	6	Franklin.....	4
Bates.....	8	Gasconade.....	1
Benton.....	1	Gentry.....	7
Bollinger.....	1	Greene.....	13
Boone.....	153	Grundy.....	5
Buchanan.....	11	Harrison.....	4
Butler.....	1	Henry.....	8
Caldwell.....	5	Hickory.....	2
Callaway.....	7	Holt.....	8
Cape Girardeau.....	8	Howard.....	2
Carroll.....	6	Howell.....	5
Carter.....	1	Jackson.....	33
Cass.....	7	Jasper.....	16
Cedar.....	3	Jefferson.....	2
Chariton.....	4	Johnson.....	8
Christian.....	1	Knox.....	2
Clark.....	5	Laclede.....	10
Clay.....	4	Lafayette.....	8
Clinton.....	9	Lawrence.....	4
Cole.....	4	Lewis.....	6
Cooper.....	6	Lincoln.....	6

COUNTIES REPRESENTED IN THE UNIVERSITY—Continued.

Linn	8	Ray	5
Livingston	9	St. Charles	1
McDonald	2	St. Clair	7
Macon	5	St. Francois	5
Maries	2	Ste. Genevieve	2
Marion	6	St. Louis	14
Miller	2	Saline	15
Mississippi	1	Schuyler	7
Moniteau	9	Scotland	4
Monroe	14	Scott	5
Montgomery	7	Shelby	5
Morgan	2	Stoddard	1
New Madrid	5	Sullivan	1
Newton	2	Taney	2
Nodaway	5	Texas	1
Ozark	1	Vernon	8
Perry	1	Warren	3
Pettis	16	Wayne	1
Phelps	35	Webster	1
Pike	8	Worth	3
Platte	6	Wright	2
Polk	2	City of St. Louis	25
Pulaski	3		
Putnam	5		
Ralls	7		
Randolph	12		

No. of counties represented (including City of St. Louis), 100.

No. of counties not represented, 15.

X. States, Territories and Foreign Countries.

Arkansas	1	New York	2
California	2	Ohio	3
Colorado	2	Pennsylvania	1
Illinois	11	Tennessee	2
Indiana	1	Texas	5
Iowa	4	Virginia	1
Kansas	5	Indian Territory	2
Kentucky	2	New Mexico	2
Maryland	1	Central America	1
Michigan	1	Germany	1
Mississippi	1	Old Mexico	5
Missouri	752		
Montana	1		
New Jersey	1		

Total represented, 25.

DEGREES CONFERRED

By the University (not including honorary degrees) during its history :

(E.E=Electrical Engineer, M.E=Mechanical Engineer, Min.E=Mining Engineer.)

A. B	338	M. S	50	†B. D.	14	C. E.	97
B. S.	217	†M. L	8	LL. B	561	†T. E.	39
B. L.	103	†Ph. M.	5	M. D.	490	E. E.	3
†Ph. B	22	†A. D. M.	1	LL. M	3	Min. E	30
†A. D. B.	7	B. P.	127	B. Agr.	34	M. E	0
A. M	91	†N. G.	12	M. Agr.	3	Ph. D.	0
Total number of degrees granted							2,245
Deduct for names counted more than once (persons taking two or more degrees).							419
Total number of individuals receiving degrees up to January, 1928.							1,526

†Degrees no longer offered.

GRADUATES OF 1897.

(a) COLUMBIA, MISSOURI.

I. CERTIFICATES.

Department of Military Science and Tactics.

Albert Upp Brandt, <i>cum laude</i> .	Charles Oscar Jenkins.
Mont Frederick Highley, <i>cum laude</i> .	John Henry Lanning.
Joseph Lewis McDermott, <i>cum laude</i> .	John Cornelius Maloney.
Francis Kamp McGinnis, <i>cum laude</i> .	Marion McFarland.
James Edward Rieger, <i>cum laude</i> .	George Washington Naylor.
Frank Powell Stone, <i>cum laude</i> .	Colonel Will Jackson Neville.
Walter William Coleman.	John Erastus Packard.
John Crockett Edwards.	Charles Leonard Parkhurst.
Judson Cooper Fast.	Bland Nixon Pipplin.
Norman Freudenberger.	John Harvey Pringle.
Felix Zalley Gray.	George Gordon Robertson.
Thomas Perry Howard.	Frank Blake Rothrock.
Lewis Linn Hunter.	Frederic Charles Schafer.
George Andrew Irvine.	William Seward.

Normal Department.

Mary Blanche Dix.	Lena Riggs.
Edward Everett Haverstick.	Frederic Charles Schafer.
Elnora Johnson.	

II. DEGREES.

Department of Engineering.

1. *Degree of Bachelor of Science in Civil Engineering (B. S.).*

Arthur Hoyt Dunlap.	William Alvin Miller.
Henry Howell Lotter.	Thomas Jacob Rodhouse.
William Graves McMeeken.	Egbert Irvin Rogers.

2. *Degree of Bachelor of Science in Electrical Engineering (B. S.).*

George Roshlevsky Stalkoff.

3. *Degree of Bachelor of Science in Mechanical Engineering (B. S.).*

Louis Hlawatha Burkhart.

Department of Medicine.

Degree of Doctor of Medicine (M. D.).

Robert Lee Reid, <i>cum laude</i> .	Jean Edward McClane.
Winthrop Warren Butman.	William Rothwell Shaefer.

Department of Law.*Degree of Bachelor of Laws (LL. B.).*

Arthur Nottingham Adams, <i>cum laude</i> .	Robert Earle Jarvis.
Arthur Gwinn, <i>cum laude</i> .	George Washington Jennings.
Harvey Dennie Murry, <i>cum laude</i> .	William Casey Key.
Martin Jackson Ostergard, <i>cum laude</i> .	Karl Kimmel.
James Edward Rieger, <i>cum laude</i> .	John Alexander Livingstone.
William Detmar Williams, <i>cum laude</i> .	John Franklin Manring.
George Harlen Barnett.	Lionel Ansel Michelson.
Fleetwood Bell.	Otho Clay Moore.
William Louis Bohnenkamp.	John Dowd McNeely.
Reford Bond.	Theodore Clarence Owen.
George Frederick Boothe.	Morton Hord Pemberton.
William Alexander Bryan.	James Louis Potter.
Charles Elmer Covert.	Robert Edwin Roberts.
Robert Sinton Dora.	Robert Emmett Rooney.
Oscar Berton Elam.	Lemuel Thomas Searcy.
George Nathan Elliott.	Harold Blanchard Sinnott.
Grant Emerson.	Fred Caspar Steltemeier.
George Albert Evans.	Orson Hansford Swearingen.
Frederick Kirkwood Ferguson.	Robert Augustus Swink.
William Orien Gatewood.	Jesse Haydn Taylor.
James Allen Gordon.	Harry Whitney Timmonds.
Charles Herbert Graves.	Sidney Johnson Wheeler.
George Leslie Gray.	Robert Edward Wilkinson.
Charles Ripley Hall.	Albert Jefway Williams.
Robinson Roy Hanger.	John Peter Winter.
William Carroll Hawkins.	Stewart Munroe Wood.
Joseph Adam Henkins.	Frank Tipton Woods.
Jesse Eugene House.	Richard Harry Woods.
George Hughes.	

College of Agriculture and Mechanic Arts.*Degree of Bachelor of Agriculture (B. Agr.)*

Charles Frederick Adams.	Alonzo James Sears.
John Henry Norton.	

Normal Department.*Diplomas and Life Certificates.*

Ethel Barton Swearingen, <i>cum laude</i> .	Minnie Katherine Organ.
James Francis Conran.	Lalla Rookh Rogers.
Arthur Martin Hitch.	Eleanor Phildelia Sears.
George Henry Hunker.	Charles Monroe Strong.
Joe Shelby McIntyre.	Charles William Turner.
John Franklin Manring.	

Academic Department.

1. Degree of Bachelor of Arts (A. B.).

Irvin Victor Barth, <i>cum laude</i> .	Arthur Marvin Hitch.
Ethel Barton Swearingen, <i>cum laude</i> .	Max Washington Myer.
Wilber Andrew Cochel.	Edward Graves Pringle.
Granville Dennis Edwards.	Everett Pine Weatherly.
George Harrison English, Jr.	James Paul White.

2. Degree of Bachelor of Science (B. S.).

Claudia May Hatton.	Eleanor Phidella Sears.
George Henry Hunker.	James Edward Weatherly.
Bert Munday.	

3. Degree of Bachelor of Letters (B. L.).

Hugh Allison Smith, <i>cum laude</i> .	Joe Shelby McIntyre.
James Francis Conran.	Thomas Jefferson Newman.
Guy Grigsby Dowdall.	Minnie Katherine Organ.
Judson Cooper Fast.	Lalla Rookh Rogers.
Arthur Gwinn.	Charles Monroe Strong.
Henry Herrnleben.	Charles William Turner.
Andrew Walker McAlester.	George Rappeen Wilkerson.
Elmer T. McGaugh.	Julius Lawton Zwick.

4. Degree of Master of Arts (A. M.).

Mary Jessie Barnett (A. B., Univ. of Mo.).
Edgar Ewing Brandon (A. B., Univ. of Mich.).
Francis Potter Daniels (A. B., Univ. of Mich.).
Louis Napoleon Gray (B. L., Univ. of Mo.).
Herman Fermain Harris (A. B., Univ. of Mo.).
John Harvey Hatton (A. B., Univ. of Mo.).
Clarence Loeb (A. B., Univ. of Mo.).
John William Scott (A. B., Univ. of Mo.).
William Edwin Turner (B. S., B. L., LL. B., Univ. of Mo.).

III. PRIZES, MEDALS, SCHOLARSHIPS, AND HONORS.

The Dachsel Prize in the Department of Engineering ..	(Not awarded)
The Prize Essays in the Department of Law— <i>Ratification in the Law of Agency</i> :	
First	Arthur Gwinn
Second.....	Harvey Dennie Murry
The Laws Astronomical Medal.....	(Not awarded)
The McAnally Medal.	Hugh Allison Smith

The Stephens Medal for Oratory— <i>The Ideal Statesman</i> .....	.....
.....	.....Morton Hord Pemberton
The Military Medal.....	.....Pte. Gilbert Lawrence Cashlon
The Military Cup.....	.....Company C., Capt. John Dowd McNeely
The James S. Rollins Scholarship, Department of Medicine .....	.....
.....	.....Andrew Jackson Detweiler
The James S. Rollins Scholarship, Department of Law .....	.....
.....	.....James Samuel Montgomery Houston
The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Agriculture) .....	.....Walter William Lewelling
The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Engineering) .....	.....Elza Allison Cox
The James S. Rollins Scholarship, Academic Department, A. B .....	.....
.....	.....Royall Hill Switzler
The James S. Rollins Scholarship, Academic Department, B. S.....	.....
.....	.....Clarence Martin Jackson
Valedictorian in the Medical Department.. .....	.....Robert Lee Reid.
Valedictorian in the Law Department.....	.....William Detmar Williams.
Valedictorian in the College of Agriculture and Mechanic Arts (School of Engineering).....	.....Thomas Jacob Rodhouse.
Valedictorian in the College of Agriculture and Mechanic Arts (School of Agriculture).....	.....Charles Frederick Adams.
Valedictorian in the Normal Department .....	.....Ethel Barton Swearingen.
Valedictorian in the Academic Department .....	.....Irvin Victor Barth.
The Honorary Degree of Doctor of Divinity (D. D.) was conferred by the University upon.....	.....The Reverend C. M. Hawkins, of Kansas City.
The Honorary Degree of Doctor of Laws (LL. D.) was conferred by the University upon—The Hon. Shepard Barclay, Chief Justice of Missouri; Andrew Walker McAlester, M. D., Dean of the Department of Medicine, University of Missouri; Paul Schweitzer, Ph. D., Professor of Agricultural Chemistry, University of Missouri; the Honorable Lawrence Vest Stephens, Governor of Missouri.	

(b) ROLLA, MISSOURI.**CERTIFICATES OF PROFICIENCY.***Assaying and Technical Analysis.*

Green, A. E.

Mathematics.

Barker, R.

Lund, A. E.

Gottschalk, V. H.

Spengler, A.

Hendricks, J. O.

Terrell, A. D.

Lockridge, G. W.

Torrence, E. C.

DIPLOMAS OF GRADUATION.

Mathematics.

Spengler, A.

Torrence, E. C.

DEGREES.

Bachelor of Science (in Civil Engineering).

Anderson, P. B.

Torrence, L. C.

Kersting, F. J.

Bachelor of Science (in Mining Engineering).

Cameron, J. S.

Eardley, A. E.

Dean, G. W.

Rogers, J.

Metallurgical Engineer.

Stewart, Arthur J., B. S., '91.

APPENDIX.

MISSOURI UNIVERSITY SUMMER SCHOOL.

JUNE 6 TO AUGUST 27, 1898.

The first term of the Summer School will begin Monday, June 6, and close Saturday, July 16. During this term courses in Latin, Mathematics, and Physics will be given. The second term will begin Monday, July 18, and close Saturday, August 27. During this term courses in Biology, English, and Shopwork and Drawing will be given.

Courses.

1. ENGLISH.

Assistant Professor PENN.

- (a) The Grammar of English.
- (b) Composition and Literature.
- (c) Wordsworth's Prelude.

2. LATIN.

Professor JONES.

- (a) Course for Teachers.
- (b) Course in Elementary Latin.
- (c) Course for Freshmen and Sophomores.

3. MATHEMATICS.

Acting Professor DEFOE.

- (a) Algebra and Geometry.
- (b) Trigonometry and Algebra.
- (c) Analytical Geometry.
- (d) Elementary Mechanics.

4. BIOLOGY.

Professor AYERS.

- (a) General Biology.
- (b) Advanced Course.

5. PHYSICS.

Professor LIFSCOMB.

- (a) Laboratory Course in General Physics.
- (b) Course in Mechanics and Sound.

6. SHOPWORK AND DRAWING.**Professor MARX.****(a). Course for Teachers.**

The courses are of two kinds: (1) Those planned to meet the wants of teachers in High Schools and Academies. (2) Those planned for teachers and other persons who desire to spend a portion of the vacation period in systematic work.

Teachers in the secondary schools will find here an excellent opportunity of reviewing subjects that they teach and of gaining suggestions of new methods, or an opportunity of obtaining university instruction, with credit therefor upon the books of the University.

The aim of the courses in English and Latin intended for teachers is to acquaint them with the best methods of teaching these languages, to familiarize them with the best helps in the way of books and illustrations, and to deal with such difficulties as the teacher encounters in preparatory work.

In the courses in Science much attention will be given to the details of laboratory equipment, to the purchase of supplies and to showing how to do the work with simple and inexpensive appliances. The apparatus employed will be precisely that which High Schools are advised to purchase. This is an excellent opportunity for teachers to prepare themselves to fill positions as science teachers in the High Schools.

The purpose of the course in Shopwork and Drawing is twofold. It aims to prepare teachers to give instruction in Shopwork and Drawing in the secondary and district schools, where there is a growing demand for such instruction, and it also aims to increase the skill of laboratory teachers in preparing home-made apparatus and repairing it when necessary.

The Shopwork will be in wood and in cold iron. The course in woodwork is expected to give to those who complete it the knowledge and skill necessary to manage such work in the public schools, while the course in cold iron will be very useful to the laboratory teacher in making and repairing apparatus. The work in both of these courses is so designed that it will not be too severe for women.

Statistics show that boards of education are demanding of teachers, year by year, greater efficiency and better scholarship. The Summer School presents to the teachers of Missouri an opportunity to meet this demand, and at very small cost.

For circular containing full information, address

M. L. LIPSCOMB, Secretary,
Columbia, Mo.

INDEX.

	Page		Page
Academic Department.....	69- 94	Mechanic Arts.	142
Admission	23- 27	Military Science	144
Approval of Schools	33- 39	Physics	146
Approved Schools.....	28- 29	Political Economy	145
Courses	71- 75	Veterinary Science	141
Degrees	48, 71	Alumni	54
Faculty	69- 70	Anatomy..	116
Fees	45	Approval of Schools... ..	33- 39
Studies	76- 94	Approved Schools	28- 33, vi
Animal Physiology....	92- 93	Astronomy.....	86
Archæology, Classical....	79- 80	Athletics	52, 60
Astronomy.....	86- 87	Athletic Association	54
Biology:		Bacteriology.	115
Botany	92	Biology..	91
Zoology	91- 92	Board of Visitors	14
Chemistry	89	Board	47, 59
English.....	76	Botany	92, 146
Geology and Mineralogy....	90	Buildings and Equipment....	39- 42
Germanic Languages.....	82	Cadetships.....	119
Greek.....	79	Calendar.....	111
History.....	83	Certificates.	49
Latin	78	Chapel Services	21, 42
Mathematics	85	Chemistry	89, 113, 146
Philosophy.	84	Christian Associations:	
Physics.....	87	Young Men's.....	53
Political Economy	83	Young Women's.	54
Romance Languages	80	Classical Archæology.	79
Admission to the University..	23- 39	Class Honors	45
Academic Department	23- 27	Climatology.	147
Agriculture, School of.....	129	Club-houses.	42, 47
Engineering, School of.....	156	College of Agr. & Mech. Arts.	122- 166
Graduate Department.....	23, 61	Departments	126
Law.	100- 103	Faculty.	122- 124
Medical.	111- 112	Historical Statement.....	123
Military Science and Tactics...	117	Commercial Studies	143
Normal Department.....	26	Counties represented.	191
From Approved Schools.	28- 33	Curators.....	14
Advanced Standing.....	27	Date of Meeting.....	171
Agricultural Chemistry.....	141	Officers.....	14
Agriculture, School of.....	127- 147	Report to Governor.	1- 13
Admission	129	Curators' Scholarships	49
Courses.....	129- 133	Degrees	48, 192, 193- 196
Faculty.....	127- 128	Departments of the University	22, 61
Studies	133- 147	Academic	69- 94
Agriculture.....	133	Agr. & Mech. Arts, College of	122- 166
Agric. Chemistry	141	Agriculture	127- 147
Botany..	146	Engineering	155- 166
Chemistry	146	Mechanic Arts.	150- 154
Climatology	147	Law.	100- 109
Commercial Studies	143	Medical... ..	110- 116
Drawing	143	Military Science & Tactics...	117- 121
English.....	145	Mines and Metallurgy.....	167- 173
Entomology	139	Normal	95- 99
Geology.	147	Directions for new Students....	43
Horticulture.....	137	Discipline	43
Mathematics.....	145	Doctor of Philosophy.....	62

	Page		Page
Drawing	143	Course.....	118
Elocution ...	93	Regulations	120
English	63, 76, 145	Cadet officers.....	117
Engineering, School of.	155-166	State Cadets, appointment of.	119
Admission	156-157	Supplies, general	118
Architecture	165	Uniforms.....	118
Civil Engineering	157	Mines and Metallurgy, School of	
Courses.....	158-166	58-60, 167-173	
Degrees	157	Buildings and Equipment...58-	59
Electrical Engineering....	160-161	Courses.....	169-173
Hydraulic Engineering.....	166	Chemistry and Metallurgy.172-	173
Faculty	155-156	Civil Engineering	171
Mechanical Engineering	162	Mining Engineering.....	169-170
Sanitary Engineering	164	Degrees	169
Surveying.....	160	Expenses	59
Enrollment in all dept's	174-192	Faculty and officers	167-168
Entomology	139	Museums:	
Examinations	45, 60	Agriculture	136
Entrance.....	23-27	Classical Archaeology.....	80
Expenses.....	45-48, 59	Musical clubs	54
Experiment Station	147-150	Normal Department	95-99
Faculty, General.....	15-19	Admission.....	26
Farm, Agricultural College	136	Certificates	97-98
Farmers' Winter Courses.....	129-130	Courses.....	97-99
Fellowships.....	52, 61	Degree	99
Fees and deposits	43	Faculty	95-97
Free tuition. See Curators' Schol-		Spring courses.....	99
arships, and Department of		Summer courses	99
Military Science and Tactics.		Observatory	87
Geology and Mineralogy	90	Omissions and Corrections	vi
Germanic Languages.....	82	Officers.....	20
Gifts to the University.	56-58	Philosophy.....	84
Graduate Department.....	61-68	Physical Culture	52
Academic	61-66	Physics	87, 146
College of Agri. and Mech. Arts		Physiology	92, 114
Law	67	Political Economy.....	84, 143
Graduate students.....	61-62, 23	Preachers and Lecturers....	21
Graduates of Appr. Schools ..	27-39	Prizes	49
Graduates of 1897	193-197	Publications, students'.....	53
Greek	79	Religious exercises	42
Gymnasium.....	52	Rollins Aid Fund	50
History	83	Rollins Scholarships	51
Honorary Degrees	49	Romance Languages.....	80
Horticulture	137-139	Schemes of Studies	
Journalism, School of	94	73-75, 104, 112, 118, 132, 158 166, 169-	173
Laboratories	41	Scholarships, free	49
Latin	78	Scholarships, Rollins prize.....	51
Law Department:		Shops	153
Admission	100-103	Societies.....	53 56, 60
Advantages.....	108	Special Students	27
Courses	103-105	Stenography.....	144
Degrees and Honors	107	Students, List of	174-189
Faculty.....	100	Academic	174
Fees	45	Agriculture	182
Methods of Instruction	106	Engineering	184
Lectures	21	Law	179
Libraries	41, 59	Medical	181
Literary societies	53, 60	Mines and Metallurgy	185
Mathematics	85, 145	Normal	178
Master of Arts.....	62	Summer School	188
Mechanic Arts	142	Studies, Regulations in regard to	43
Mechanic Arts, School of.	150-154	Stephens Medal... ..	49
Course	152-153	Summaries	189-192
Facilities	153	Summer School	198
Faculty	150-152	Teachers' Courses	98, 99
Medical Department	110-116	Teaching Fellowships	52
Admission	111-112	Tuition	45, 59
Course	112	Valedictorian	45
Degrees	116	Veterinary Science	141
Faculty	110	Women, special provision for ...	42
Studies	113-116	Y. M. C. A	53
Military Science and Tactics.117-	121	Y. W. C. A	54
Admission.....	117	Zoology	91

378.73
M68H

READ WHAT GOVERNOR STONE AND
GOVERNOR STEPHENS SAY ABOUT EN-
DOWING THE UNIVERSITY. PAGES 7-10.

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF
MISSOURI

FIFTY-SEVENTH REPORT

OF THE

CURATORS

TO THE GOVERNOR OF THE STATE

1898-1899

COLUMBIA, MISSOURI

CATALOGUE

OF THE

UNIVERSITY OF THE STATE OF
MISSOURI

FIFTY-SEVENTH REPORT

OF THE

CURATORS

TO THE GOVERNOR OF THE STATE

1898-1899

COLUMBIA, MISSOURI

1899-1900

JULY							JANUARY							JULY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1		1	2	3	4	5	6	1	2	3	4	5	6	7
2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	29	30	31				29	30	31				
30	31																			
AUGUST							FEBRUARY							AUGUST						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1	2	3	4				
6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11
13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18
20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25
27	28	29	30	31			25	26	27	28				26	27	28	29	30	31	
SEPTEMBER							MARCH							SEPTEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1							
3	4	5	6	7	8	9	4	5	6	7	8	9	10	2	3	4	5	6	7	8
10	11	12	13	14	15	16	11	12	13	14	15	16	17	9	10	11	12	13	14	15
17	18	19	20	21	22	23	18	19	20	21	22	23	24	16	17	18	19	20	21	22
24	25	26	27	28	29	30	25	26	27	28	29	30	31	23	24	25	26	27	28	29
														30						
OCTOBER							APRIL							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1							
8	9	10	11	12	13	14	8	9	10	11	12	13	14	7	8	9	10	11	12	13
15	16	17	18	19	20	21	15	16	17	18	19	20	21	14	15	16	17	18	19	20
22	23	24	25	26	27	28	22	23	24	25	26	27	28	21	22	23	24	25	26	27
29	30	31					29	30						28	30	31				
NOVEMBER							MAY							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1							
5	6	7	8	9	10	11	6	7	8	9	10	11	12	4	5	6	7	8	9	10
12	13	14	15	16	17	18	13	14	15	16	17	18	19	11	12	13	14	15	16	17
19	20	21	22	23	24	25	20	21	22	23	24	25	26	18	19	20	21	22	23	24
26	27	28	29	30			27	28	29	30	31			25	26	27	28	29	30	
DECEMBER							JUNE							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1							
3	4	5	6	7	8	9	3	4	5	6	7	8	9	2	3	4	5	6	7	8
10	11	12	13	14	15	16	10	11	12	13	14	15	16	9	10	11	12	13	14	15
17	18	19	20	21	22	23	17	18	19	20	21	22	23	16	17	18	19	20	21	22
24	25	26	27	28	29	30	24	25	26	27	28	29	30	23	24	25	26	27	28	29
31														31						

UNIVERSITY CALENDAR.

AT COLUMBIA.

1899—September 7, 8, 9, 11.....Entrance Examinations
September 12, Tuesday.....All Departments Open
November 29, Wednesday, 4 p. m., to December
4, Monday, 8:30 a. m.....Thanksgiving Holidays
December 19, Tuesday.....Semi-annual Meeting of the Curators
December 22, Friday, at 9:30 a. m., to..... } Christmas Holidays
1900—January 3, Wednesday, at 8:30 a. m.....
January 9, Tuesday.....Memorial Day
January 19-27.....Mid-Year Examinations
January 30, Tuesday.....Second Semester Begins
February 22, Thursday.....Holiday
May 25 to June 2.....Final Examinations
June 2, Saturday.....Stephens Medal Contest
June 3, Sunday.....Baccalaureate Sermon
June 4, Monday.....Class Day
June 5, Tuesday.....Alumni Day
June 5, Tuesday.....Annual Meeting of the Curators
June 6, Wednesday.....Commencement Day

AT ROLIA.

1899—September 16 and 18, Saturday and Monday,
10 a. m.....Entrance Examinations
September 19, Tuesday.....First Term Begins
November 30, Thursday.....Thanksgiving Holiday
December 22, Friday, at 12 m., to..... } Christmas Holidays
1900—January 2, Tuesday.....
January 2, Tuesday.....Second Term Begins
February 22, Thursday.....Holiday
March 19, Monday.....Third Term Begins
June 12, Tuesday.....Annual Meeting of Executive Committee
June 13, Wednesday.....Commencement

CONTENTS.

GENERAL STATEMENT—Calendar	11-	111
Report of the Board of Curators.....	1-	12
Corporation		13
General Faculty	14-	17
Fellows and Officers	17-	18
Preachers and Lecturers		19
GENERAL INFORMATION	20-	64
Historical Statement		20
A. AT COLUMBIA	21-	62
Requirements for Admission by Examination.....	21-	26
Admission from Approved Schools.....	26-	37
Organization and Government.....		37
Buildings and Equipment	38-	41
Lectures, Recitations and Religious Exercises.....		41
Provisions for Young Women.....		41
Discipline		41
Directions for New Students.....		42
Regulations regarding studies.....	42-	44
Expenses	44-	48
Degrees and Certificates.....	48-	49
Prizes	49-	50
Sources of Aid	50-	52
Making One's Way at the University.....		53
Cost of Attending the University.....	53-	54
Physical Culture		54
Societies	55-	58
Gifts to the University.....	58-	62
B. AT ROLLA	62-	64
Buildings and Equipment.....	62-	63
Expenses, etc.....	63-	64
DEPARTMENT STATEMENTS—		
I. GRADUATE	65-	71
Admission (Academic Graduate Courses).....		65
Degrees (Academic)		66
Courses	67-	70
College of Agriculture.....		70
Engineering		71
Law		71
II. ACADEMIC—Faculty	72-	73
Scheme of Courses	73-	77
Courses of Study in detail.....	78-	98
English, 78; Latin, 80; Greek, 81; Classical Archæology, 82; Ro-		
mance Languages, 83; Germanic Languages, 85; History, 86;		
Political Economy, 87; Philosophy, 88; Mathematics, 88; As-		
tronomy, 89; Physics, 91; Chemistry, 92; Geology and Miner-		
alogy, 94; Biology, 95; Physiology, 96; Elocution, 98.		
<i>School of Journalism</i>		99

Contents

v .

III. NORMAL—Faculty	100- 101
Elementary course	102
Advanced course	103
Teachers' courses in Summer Session.....	104
IV. LAW—Faculty	105- 108
Admission	105- 108
Courses	109- 111
Texts	110
Graduate course	110
Methods of instruction	111- 112
Degrees and Honors	112- 113
Announcements	113- 115
V. MEDICINE—Faculty	116- 117
Admission	117- 118
Course	119
Course in detail	120- 123
Degrees, etc	123- 124
VI. MILITARY—Announcement	125- 129
VII. COLLEGE OF AGRICULTURE AND MECHANIC ARTS	130- 173
Faculty	130- 132
Historical Statement	132- 134
Schools of Agriculture and Mechanic Arts.....	134-156, 160- 163
Faculty	134- 136
Admission	136
A. Schemes of courses in School of Agriculture	137- 140
Courses in detail	141- 156
Agriculture, 141; Horticulture, 145; Entomology, 148; Agri- cultural Chemistry, 150; Veterinary Science, 150; Bacteri- ology, 151; Shopwork, 152; Drawing, 152; Commercial Studies, 152; Military Science, 153; English, 154; Political Economy, 154; Mathematics, 154; Physics, 155; Chemistry, 155; Botany, 155; Geology, 156; Climatology, 156.	
B. Experiment Station	156- 159
C. School of Mechanic Arts	160
Scheme of studies	160- 161
D. School of Engineering	163- 173
Faculty	163- 164
Admission ..	164- 165
Courses and Degrees	165
Courses in detail	166- 173
(a) Civil Engineering	166- 167
(b) Surveying	167
(c) Electrical Engineering	168- 169
(d) Mechanical Engineering	169- 171
(e) Sanitary Engineering	171- 172
(f) Architecture	172- 173
(g) Hydraulic Engineering	173

VIII. SCHOOL OF MINES (at Rolla)	174- 184
Faculty	174
Statement	175
Admission	175- 176
Courses and Degrees	176
Courses in detail	176- 184
(a) Mining Engineering	176- 178
(b) Civil Engineering	178- 179
(c) Chemistry and Metallurgy	179- 180
(d) General Science	181- 182
(e) Academic Course	183- 184
LIST OF STUDENTS AND GRADUATES.....	185- 212
I. LISTS OF STUDENTS.....	185- 207
Graduate Department.....	185
Academic Department	185- 190
Normal Department	191- 192
Law Department	192- 194
Medical Department	194- 195
College of Agriculture and Mechanic Arts.....	195- 199
School of Mines and Metallurgy	199- 201
Summer School	201- 203
Summaries	203- 207
Degrees Conferred	207
II. LISTS OF GRADUATES FOR 1897-8.....	208- 212
At Columbia	208
At Rolla	212
APPENDIX—	
Summer Session	213
INDEX	216

Omissions and Corrections.

Since the list of Approved Schools (pages 27-32) was printed, the following schools have been approved:

Ft. Scott (Kan.) High School, for Law, Medicine, Agriculture, School of Mines, Engineering, B. L. and B. S. courses in the Academic Department. W. C. Lansdon, Principal.

Kansas City (Kan.) High School, for Law, Medicine, Agriculture, School of Mines and A. B. course in the Academic Department. L. I. L. Hanks, Sup't.

Paola (Kan.) High School, for Law, Medicine, Agriculture, School of Mines and A. B. course in Academic Department. Alfred H. Lyon, Principal.

Walther College, St. Louis, for Law, Medicine, Agriculture, School of Mines and A. B. and B. L. courses in Academic Department. H. F. Mueller, President.

The following schools have been approved for additional courses:

Ft. Smith (Ark.) High School, for A. B. course. See page 28.

Leavenworth (Kan.) High School, for A. B. course. See page 28.

Shelbyville High School, for B. S. course. See page 30.

Report of the Board of Curators.

COLUMBIA, Mo., 1 May, 1899.

To his excellency, LON V. STEPHENS, *Governor of Missouri*:

DEAR SIR: I herewith furnish the Annual Catalogue of the University of Missouri, presenting a review of the work done for 1898-99 and outlining the matter for the scholastic year of 1899-1900.

DEATHS.

Mr. W. C. Tindall, for many years Professor of Mathematics, was made Emeritus Professor, without salary, in June, 1898. This action was taken on account of Professor Tindall's failing health. In the early fall of 1898 he died. He had served the University faithfully for some fifteen years. He is the fourth Professor that has been killed by overwork in the University in the last seven years. It is literally true that Dr. Porter, Professor Gibson, Professor Shrader, and Professor Tindall have all been killed in the last seven years by overwork. How say some that Professors in our University have an easy time?

Mr. Floyd Bruce Cramer and Mr. Martin Edward Elling, students of the University at Columbia and citizens of Missouri, volunteered with nearly a hundred of their fellow students for the Spanish-American War. While in the service of the Government they died.

Second Lieutenant Joseph Edward Smith of the First Regiment of Volunteers of the State of Washington was killed near Manila early in the year 1899. He was a native of Missouri, his former residence being at Laddonia. From Missouri he moved to the State of Washington. Thence he returned for his education to our State University, where he was in attendance during the sessions of 1891-92 and 1892-93. Then he returned to his home near Endicott, in the State of Washington. There he gained quite a name as a writer of newspaper articles. At the opening of the Spanish-American war he enlisted in the first regiment of Washington volunteers. His service to his country ended with his death in battle near Manila. The University community thinks that the State could well afford to place in the Academic Hall a Memorial Tablet to these gentlemen. It could probably be done for \$50 or \$100.

General Joseph B. Douglass, for years superintendent of the unsold lands of the College of Agriculture and Mechanic Arts, died in the fall of 1898.

University of the State of Missouri

His successor in office, Captain J. W. Knelsley, died at Columbia in the early winter of 1899. Since his death the office has been vacant.

RESIGNATIONS AND APPOINTMENTS.

At Columbia: In the winter of 1898, the term of Lieutenant W. A. Thurston, Commandant of Cadets, expired. The Federal Government placed in his stead Lieutenant (now Captain) A. P. Buffington. In the summer of 1898, Dr. Wm. Ophuels offered his resignation as Professor of Bacteriology and Pathology. In his stead we have elected Dr. P. Kaufmann. In the fall of 1898 Professor J. P. Blanton resigned his position as Professor of the Theory and Practice of Teaching and Dean of the Normal Department. During November and December the work was carried on by two students of the University. In December the Board elected J. M. White, Professor of Theory and Practice of Teaching, his term to begin from 1 January, 1899. This appointment left vacant the position of Examiner of Schools. Hon. John R. Kirk was appointed to fill this place, his term of service to begin on 16 January, 1899.

In the fall of 1898 Hon. J. W. Knelsley, member of the Fortieth General Assembly, was appointed superintendent of the unsold lands of the College of Agriculture and Mechanic Arts.

Since 1 February, 1898, it has been deemed advisable to keep the Law Library and the General Library of the University open to students at night. It was believed that this would be some offset to the temptations to which students are everywhere exposed at night. It was necessary to employ some of the students for this service. The compensation offered them is very small and the service is satisfactory.

No mention is made by name of the teaching fellows, of whom a number are employed every year. They are not members of the Faculty but are advanced students who find the small compensation (\$200 a year) which the University gives them an aid in prosecuting their studies. Each of them teaches six hours a week, the remainder of time being spent in advanced study. It takes four teaching fellows to do the work of one instructor and they receive each about one fourth of the compensation given to an instructor. This service is satisfactory in maintaining advanced work in the University and costs the State nothing beyond what it would have to pay instructors.

In the summer of 1898 Mrs. G. L. Norvell resigned her position as matron of the U. B. Club house. In her place the Board appointed Mr. George W. Henderson, steward. Under the present arrangement he is in charge of the U. B. Club and also of the new Club (recently completed). Students occupy rooms in both these buildings. The food is cooked and the meals are served for both buildings in the new Club house. To secure better order the Board has placed a Monitor on every floor of each

Club house. These Monitors get their room rent and tuition free in return for their services in maintaining good order and reporting disturbances.

At Rolla: The Director, Dr. George E. Ladd, Ph. D., has been appointed to the newly created Chair of Mining and Geology. Professor F. W. Draper, E. M., has been elected to the newly created Chair of Metallurgy. Upon the resignation in the fall of 1898 of Mr. G. W. Dean, assistant in the Chemical Laboratory, the work formerly done by him was divided as follows: Mr. George C. Clark was appointed to do the teaching work formerly done by Mr. Dean, and Mr. E. P. Perkins to assist in setting up apparatus for the Professor of Chemistry, while Mr. A. D. Wilson was put in charge of the supply room. Upon the resignation in the fall of 1898 of Mr. Arthur P. Garrett, Instructor in Shop Work and Drawing, his work was divided as follows: Mr. A. D. Terrell took charge of the Drawing and Mr. R. H. Hatchett of the Shop Work.

THE FACULTY.

The University is in charge of able men. They are thoroughly committed to the work in hand, and display enthusiasm.

In administering the affairs of the University one aspect challenges the most serious consideration. Changes in the Faculty are to be avoided, and should never take place unless for reasons the most cogent in their character. Changes are often inevitable because of our inability to retain in the service of the University the best qualified workers of the times. Other and more favored institutions, with ample resources at command, take from us our thoroughly trained men. The loss thus sustained is incalculable. The retention of valuable men is all-important. Unless ample provision is made to do this we shall suffer additional losses. Enlarged resources should be placed at the command of the Board, enabling us to compete with any institution in the country in securing and retaining the best talent for University work. This view has special reference to the salaries of Head Professors. A great State like Missouri can not afford to cripple the work of its University or minify the opportunity of the youth of the commonwealth. In meeting the wants here indicated, and supplying in the Faculty representative ability of the age, we can attract the young men of Missouri to the University and prevent them from leaving home in search of higher advantages elsewhere. The above views are commended to and urged upon the attention of the people of Missouri.

The Faculties at Columbia (the same is also true at Rolla) are more harmonious than they have ever been in the history of the University. Teachers and officers are working in sympathy for the advancement of the institution. This is no small thing.

THE STUDENTS.

Free Tuition. Except in the Junior and Senior years of Law and of Medicine, the Board of Curators has ordered that tuition shall be free in all departments of the University from 1 September, 1899. This is a thing which the Curators have under the law the power to do without reference to anybody else. In the exercise of this power, they made this order on 21 December, 1898. This order will be executed to the letter unless the General Assembly should make the appropriation to the University so small as to compel us in order to meet the expenses of maintenance to restore the charges for tuition. May God forbid that this be done!

Increased Enrollment. The enrollment in the departments at Columbia (and also at Rolla) is very much larger in the session of 1898-99 than it has ever been (at either place) in the history of the University. The enrollment at Columbia has exceeded in this session eight hundred and four students, while that at Rolla has reached one hundred and twenty-five, making a total in the whole University of more than nine hundred and twenty-nine. With the new railroad from Columbia to Kennard giving good connections with the M., K. & T. and the Missouri Pacific systems, with no students absent at war, and with a large increase in the number of Approved Schools, it is confidently expected that next session a thousand students will be enrolled at Columbia and perhaps one hundred and fifty at Rolla. It is safe to say that the Forty-First General Assembly will find over one thousand students at Columbia, and at Columbia and Rolla combined at least eleven hundred and fifty. In the session of 1898-99 the students at Columbia and Rolla came from 27 States, Territories and foreign countries.

Discipline. The discipline in the session of 1898-99 has been remarkably good. The President reports that at Columbia no student has been reported to him for bad behavior or failure to study. Such failures as have happened in these respects have been adjusted by the subordinate officers of the University. The Committee on Discipline has had no meeting at all. At Rolla, too, the discipline has been remarkably good.

Paying Their Own Way. A number of students manage to pay their own way at the State University by their own exertions. Some of the most distinguished men of Missouri and other States have done this in former years. The number of such students in the present session (1898-99) is larger than ever before in the history of the University. The Y. M. C. A., a student organization, to its credit be it said, has appointed a committee to canvass the town for work and distribute it among students needing it. Too much praise can not be given for the encourage-

ment which this body of Christian students and the teachers and officers of the University have given to poor young men in supporting themselves by their own labors.

THE UNIVERSITY AND THE PUBLIC SCHOOLS.

Spring Courses for Teachers. The University is doing everything in its power to aid the district schools and the high schools in their efforts to do better work. The Spring Courses for Teachers which are given from April 1 to June 1 are intended especially for the teachers in the district schools, and embrace those subjects which are of chief interest to them. These courses are wholly free and no examination is required for admission.

The Summer School. The Summer School opens early in June and continues for twelve weeks. It is intended primarily for the high school teachers. During the past summer, courses in English, Latin, French, German, Greek, Biology, Physics, Shopwork and Drawing, Horticulture, and Mathematics were given. It is gratifying to know that this school is growing in favor year by year and that many of the leading teachers of the State have been among its students. During the last session the enrollment was one hundred and nineteen (119).

Approved High Schools. In 1891, there were twenty-three (23) schools on the list of "Approved Schools." There are now over ninety-two and the list is growing all the time. There are nearly one hundred (100) schools applying for admission to this list.

The University has done much to foster the marvelous growth which has taken place in secondary education in the State in the last three years. In June, 1895, there were nine thousand five hundred (9,500) pupils enrolled in the high schools of Missouri. In June, 1898, according to the Superintendent of Public Instruction, the number had reached to nearly twenty thousand (20,000), while his estimate for the year ending June, 1899, is twenty-five thousand (25,000).

We have already begun to reap the benefits of this growth in the secondary schools. The Freshman class entering in September, 1898, was the largest and the best in the history of the University, for most of the students came from Approved Schools.

State Aid to High Schools. It would be a Godsend to education in Missouri if in some way the State could give *stimulative* aid to high schools in counties that really need aid. If it be allowed us to make some suggestions, we would respectfully offer the following. It is a matter that deeply concerns the University.

(1) State aid should not be extended to a high school situated in a school district that is able to support a high school of its own—say in a

district in which the assessed valuation of property is a million dollars or more.

(2) State aid should not be offered to a high school in a district in which the people are taxing themselves for school purposes less than seventy-five cents on the hundred dollars. To those who tax themselves in this sum the State might well offer \$300 or \$400, this minimum amount being increased where the rate of taxation is eighty cents on the hundred dollars, and again increased where it is eighty-five cents, and so on up to a dollar.

(3) To encourage three or more school districts to unite for the support of a common high school, as provided for in an existing statute, a fixed amount of State aid might be offered without reference to the assessed valuation of property. There would be no danger that rich districts might unite with poor districts, and thus profit by State aid; for the loss to a rich district by uniting with two or three poor ones would be greater than the aid received. The State could well afford to put a premium upon such a union of rural districts for the maintenance of a common high school.

(4) It might well be specified that where State aid is extended to any high school the teaching shall gradually become industrial as well as literary and scientific. Any high school profiting by State aid might well be required to give in time instruction in Mechanic Arts, Horticulture, Entomology, and Domestic Science, as well as in the subjects usually taught in first class high schools. The richer portions of Missouri can well afford in their own interest to lift up education in the poorer sections.

STATE BUREAUS, BOARDS, AND COMMISSIONS AT COLUMBIA.

Every department of the State Government which has for its object scientific, philanthropic, or statistical work should be located at the University at Columbia. Free quarters should be given to such Bureaus, Boards, and Commissions in the buildings of the University. They should have free access to its libraries and laboratories. They might occasionally lecture before our students. They should cooperate with the allied departments of the University and receive help from them. Chief among these the Geological Survey, which is now crowding the Armory at Jefferson City, might well be removed to Columbia, where we have a fire proof museum built specially for geological specimens and ready for occupation. This museum is fifty by one hundred feet. We stand prepared to furnish the Survey with sufficient office rooms also. We suggest Columbia partly because it will henceforth be easy of access from Jefferson City over the new railroad which will be in operation by 1 September, 1899. It will then be possible to go from Jefferson City to Columbia in an hour and a

half. The distance along the proposed railroad and the M., K. & T. with which it connects is about thirty-five miles.

The State Board of Health should receive free quarters in our Medical Department, and have access to our libraries and laboratories. It would be an aid to us in our medical work and we could help the Board greatly.

In our Engineering building should be located any Bureau or Commission that may be established for good roads.

The State Board of Charities and Correction might well be quartered in our Academic Hall close to our Department of Political Economy, which should receive aid from it and get aid in return.

The State Fish Commission should have at least a Station at Columbia in connection with our Department of Biology and our Experiment Station. We could render it valuable aid and receive some aid in return.

Let us close by saying that every Department, or Board, or Bureau, or Commission of the State that has for its object scientific, statistical, or charitable work should be located at Columbia in the buildings of the University, should have rooms rent free, should have access to the libraries and laboratories, should receive aid from its scientific and statistical departments, and should render them some service in return.

PERMANENT PROVISION FOR THE UNIVERSITY.

The following recommendations, respecting the State University, of Gov. Stone in his last message and of Gov. Stephens in his first message to the Legislature of Missouri, are in perfect accord. They should make an epoch in the history of higher education in our State, and should call forth hearty praise from every advocate of enlightened progress.

Hon. Wm. J. Stone, Governor of Missouri, in his message to the Thirty-ninth General Assembly at Jefferson City, on Friday, January 8, 1897, says:

"We now have laid the foundation of a great University—but we have little more than that. If the institution is liberally supported by the people and wisely managed by those in charge of it, we can soon build up here in our Imperial State the greatest University in the southwestern section of the Union. I should regard that consummation as one of the proudest achievements within our reach—one that would reflect the highest honor and redound in the greatest benefits to the people. Aside from the natural and patriotic desire all of us should feel to supply our sons and daughters with the best possible educational facilities, the presence of a superb and famous University in the State would do more, perhaps, than any other one thing to lift the State into universal esteem and attract to it the favorable notice of mankind. It will not do to say that the

University is not the school of the poor boy, or that it is not now what it ought to be. As a matter of fact, a majority of the University students are the sons and daughters of those denominated as the common people. But if it were true that the children of the poor do not for any reason enjoy to any large extent the advantages of the institution, then their opportunities for enjoying them should be made easier. It more often happens than otherwise that those who rise to great and deserved prominence in the State or nation, and who add the greatest luster to their country's history, have come from what are regarded as the humbler walks of life. There are hundreds of boys and girls whose possibilities of usefulness and greatness can not be estimated, if they were only given opportunities for full development. Our common and intermediate schools are indispensable. They perform a noble work and should be supported with unstinted generosity. But those schools can not take the place of the University. The University is the final training school where those prepared for admission to it are rounded out and specially equipped for successful labor in the fields of their choice. It should be supported in a broad and catholic spirit, provided with every needed facility, and administered along such practical lines as will strengthen and build it up, so that none desiring its advantages will be denied them. If it is not now such a school as it ought to be, we should, on that account, strive all the more to make it what we would have it. Somewhere in the Southwest and in the near future, a splendid University will rise—one that will shine resplendent above all rivals. Illinois, Iowa, Kansas, Nebraska and Texas are all fighting for this distinction. When success is once achieved it will be hard to wrest the laurel from the victor. Unquestioned supremacy once obtained is apt to be permanent. Missouri holds the key to the situation, and, if we but utilize our advantage, we can win the prize. If we are to succeed, the people must take hold of the University with a firm but affectionate hand and lift it right up beyond the reach of danger, and send it forward with that confident strength that overwhelms opposition and makes victory sure.

"The University can not be properly, even decently, supported out of the present revenues and in accordance with the present methods of making appropriations without detriment to other important interests. The truth is, this institution ought to be taken out of the general squabble for appropriations which occurs at every regular session of the General Assembly, and be provided with a permanent and sufficient income of its own. The sum which can now be set apart out of the general revenue for the University is grossly and shamefully inadequate to answer its just demands. It ought to be sustained from a permanent fund. It should not only be spared the humiliation of becoming a biennial mendicant, but it should be placed in a position of absolute independence.

Many of the States now levy a special tax or set apart by law a certain per cent of their aggregate revenues for their Universities, varying in amount from one-fifth to one-twelfth of one mill per annum on every dollar of assessments or collections. This is done in Ohio, Indiana, Illinois, Wisconsin, Minnesota, Michigan, Kansas, Nebraska, California, and perhaps other States. In Missouri the University gets what it can out of what some have not inaptly designated as the general scramble. Why should not our University be treated with as much consideration as are those of other States? Not long since the Hon. John R. Kirk, Superintendent of Public Instruction, recommended that the General Assembly should set apart for the benefit of the University an equivalent of one-sixth of a mill per annum upon every dollar of the assessed value of the taxable property of the State; and in support of his recommendation he expressed the hope that if that policy should be adopted it would 'remove the question of properly supporting the University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is secured through the action of a just and unfailing rule.' If that recommendation should be agreed to, it would result in creating an annual revenue of about \$165,900, based on present valuations. The sum realized from such a tax would, of course, increase from year to year with the increase of valuations; but that would be as it should, for the necessities of the institution would increase with the growth of the State. In the general spirit and object of this recommendation, and in its wisdom as a policy, I most heartily concur."

Hon. Lon V. Stephens, Governor of Missouri, delivered before the Thirty-ninth General Assembly, at Jefferson City, January 11, 1897, his Inaugural Address, in which he said:

"No interest in Missouri should be more carefully guarded or more vigorously promoted than her public school system. Her schools should all be encouraged by wise legislation and supported, as they have always been, by ample appropriations. The State University, which is the cap sheaf of our public school system, is entitled to, and will, doubtless, receive at your hands that consideration which it has always received, and which will enable it to take front rank among the institutions of America. If the necessity ever existed for a Missouri youth to leave his own State for education, it should be removed by such judicious fostering of our own institution as will not only keep our boys and girls at home, but will draw to Missouri the ambitious of other States. I have conferred with Governor Stone, and I have read that portion of his message concerning the endowment fund for the University. I approve of the suggestions he makes to you on this subject."

University of the State of Missouri

In a Special Message sent in February, 1897, to the Thirty-ninth General Assembly, earnestly advocating the endowment of the University, His Excellency, Governor Stephens, says:

"Under its present conditions the revenue of the University from endowments from the United States Treasury (known as the 'Morrill Fund') and from fees and rents, amounts to about \$102,000 per year. The current expenses of maintenance, including the proper and inevitable growth of libraries and laboratories, and a reasonable margin for putting up special buildings, as outlined in the biennial report just issued, exceeds this amount by at least \$100,000.....*

"As the fifth State in the Union, Missouri can not afford to take a step backward, nor are we willing to stand still in this fight for the higher education of our children when the States adjoining us are doing as much for theirs....."

Finally, if our University is to keep pace with other State Universities, and if Missouri means to offer her children on her own soil as good education as is offered by other States, she must give her University in some form adequate permanent endowment for maintenance and support, and must provide buildings and equipment with greater liberality than has been shown in the immediate past. Our University can not hold its own in the race for preeminence when other States are much more liberal in their appropriations.

Some six years ago a bill was introduced into the Legislature of Michigan increasing more than three times the annual tax for the maintenance and support of the University. Not more than three votes in House and Senate combined were cast against the measure.

About four years ago the Ohio Legislature voted by a large majority to double the annual tax for the maintenance and support of her University.

About three years ago the Legislature of California passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, which had, in addition to said tax, an interest-bearing endowment of more than four millions of dollars, and had recently received from private individuals promises of more than four millions of dollars for new buildings. Therefore, although the University had four millions of dollars in interest-bearing funds, and had received offers of four millions of dollars from private individuals for new buildings, and was receiving from the State for current expenses \$209,000 for each biennial period, the Legislature, in the midst of hard times, passed without a dissenting vote a bill to double the tax for the maintenance and support

*An attentive reading of this paragraph shows that the Governor means \$100,000 a year, or \$200,000 for each biennial period.

of the University, so that it should yield thenceforth for each biennial period \$400,000. The assessed valuation of property in Missouri is almost exactly what it is in California. The income of the California University is not far short of \$500,000 a year—or \$1,000,000 each biennial period.

In the winter of 1899 the Legislature of Nebraska, by a large majority, voted to double the tax for the maintenance of the State University. If Missouri taxed herself at the same rate she would give to her University more than \$1,500,000 each biennial period.

In the winter of 1899 the Legislature of Kansas gave to the University at Lawrence \$355,000 for the biennial period, and to the Agricultural College receives for maintenance annually three twenty-fifths (3-25) Kansas has given in the present biennial period for the support of instruction represented at Columbia, Missouri, \$470,000.

The University of Illinois receives from all sources nearly \$300,000 a year—nearly \$600,000 each biennial period.

Ohio gives her University annually the proceeds of a tax of one tenth (1-10) of a mill. The income of the University from all sources is \$275,000 a year, or \$550,000 in a biennial period.

The University of Michigan (not including the School of Mines or the Agricultural College) receives annually the proceeds of a tax of one sixth (1-6) of a mill. Its income from all sources is more than \$425,000 a year—\$850,000 a biennial period.

The University of Wisconsin receives annually for maintenance nine fortieths (9-40) of a mill and a large fraction of a mill more for special purposes. Its income from all sources is more than \$325,000 a year—more than \$650,000 each biennial period.

The University of Iowa (not including the Agricultural and Mechanical College) receives for maintenance annually three twenty-fifths (3-25) of a mill, and for buildings (for five years) one tenth (1-10) of a mill. In Missouri a similar tax would yield \$250,000 a year—or \$500,000 a biennial period.

The University of Minnesota gets annually for maintenance alone (not including buildings) three twentieths (3-20) of a mill. The total income is about \$275,000 a year—\$550,000 biennially.

The University of Oklahoma has the proceeds of a tax of one half (1-2) of a mill each year. In Missouri this would mean \$500,000 a year, or \$1,000,000 each biennial period.

Departing from State Universities let me call attention to the fact that we must all compete in some measure with the University of Chicago, whose income exceeds \$600,000 a year, or \$1,200,000 each biennial period.

It is not our business in the annual catalogue to advertise the glories of other States and other Universities, but it is our duty to tell our

own people plainly that if better provision is not made for their University, it will become a by-word and a reproach when compared with those of other States, and that the youth of our State must receive at home inferior educational advantages or must go over the borders of this Commonwealth to Universities that are liberally supported by other States. Kansas, Wisconsin and Illinois are very close, and Lincoln, Nebraska (the seat of the University), is within two hours' ride of the northwestern border of Missouri.

Very respectfully yours,

JOHN D. VINCIL,

President Board of Curators.

The Board of Curators and the Faculty reserve the right to modify, without further notice, any offer made in this catalogue, if circumstances should render such change necessary, and will be bound by it in any event only for the session following the date of publication.

CORPORATION.

THE BOARD OF CURATORS.

R. B. OLIVER, Cape Girardeau.....	}	Term expired Jan. 1, 1890.
G. B. ROLLINS, Columbia.....		
JAS. T. MOORE, Lebanon.....		
GARDNER LATHROP, Kansas City.....	}	Term expires Jan. 1, 1901
O. D. JONES, Edina.....		
M. E. BENTON, Neosho.....		
JOHN D. VINCIL, St. Louis.....	}	Term expires Jan. 1, 1903
NOAH M. GIVAN, Harrisonville.....		
CAMPBELL WELLS, Platte City.....		

OFFICERS OF THE BOARD.

JOHN D. VINCIL.....	President
NOAH M. GIVAN.....	Vice-President
J. G. BABB,	R. B. PRICE,
Secretary.	Treasurer.

THE EXECUTIVE BOARD AT COLUMBIA.

NOAH M. GIVAN.....	Harrisonville
CAMPBELL WELLS.....	Platte City
G. B. ROLLINS.....	Columbia

THE EXECUTIVE COMMITTEE OF THE SCHOOL OF MINES.

JOHN D. VINCIL, Chairman.....	St. Louis
M. E. BENTON.....	Neosho
JAS. T. MOORE.....	Lebanon
CHAS. L. WOODS,	HENRY WOOD,
Secretary.	Treasurer (office at Rolla).

THE BOARD OF VISITORS.

CHARLES E. YEATER.....	Sedalia
C. B. CORUM.....	Boonville
WALLACE ESTILL.....	Estill, Howard county
J. N. BALLARD.....	Montrose
WM. A. WIGHT.....	Moberly

Faculty of the University.

Names are printed in order of appointment, except that of the President.

Those marked with a star[*] are names of officers or members of the Faculty of the School of Mines and Metallurgy, at Rolla, Missouri.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediaeval History.

PAUL SCHWEITZER, Ph. D., LL. D.,

Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,

Professor of Surgery and Diseases of Women and Children.

WOODSON MOSS, M. D.,

Professor of Anatomy and Practice of Medicine.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. L.

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

JAMES AULL YANTIS, LL. B.,

Professor of Law.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

ALEXANDER MARTIN, A. M., LL. D.,

Professor of Law and Dean of the Law Faculty.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

CHRISTIAN WILLIAM MARX, B. E.,

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology (Human and Comparative), and Veterinarian to the Experiment Station.

*ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

JOHN DAVISON LAWSON, B. C. L., LL. D.,
Professor of Law.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,
Professor of Classical Archaeology, Assistant Professor of Greek, Curator of the Museum of Classical Archaeology, and Dean of the Academic Department.

FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology, and Curator of the Biological Museum.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture, and Horticulturist to the Experiment Station.

*ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

HENRY JACKSON WATERS, B. A. S.,
Dean of the College of Agriculture and Mechanic Arts, and Director of the Experiment Station.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLACKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

*EUGENE THOMAS ALLEN, Ph. D.,
Professor of Chemistry.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,
Professor of Elocution.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor (in charge) of Electrical Engineering.

CURTIS FLETCHER MARBUT, B. S., A. M.,
*Assistant Professor (in charge) of Geology and Mineralogy, and Acting
Curator of the Geological Museum.*

*GEORGE EDGAR LADD, Ph. D.,
*Director of School of Mines and Metallurgy, and Professor of Mining
and Geology.*

*GEORGE REINOLD DEAN, C. E., B. S.,
Professor of Mathematics.

***ABRAHAM PERRY BUFFINGTON (Captain, U. S. Army),
Professor of Military Science and Tactics.

YOUNGER PITTS ROTHWELL, A. M.,
Professor of Physical Culture, and Director of Gymnasiums.

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

JOSEPH MARTIN WHITE, A. M.,
Professor of Pedagogy.

*F. W. DRAPER, E. M.,
Professor of Metallurgy.

*PAUL JULIUS WILKINS, B. S.,
Instructor in Modern Languages.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.

*ROGER H. HATCHETT,
Instructor in Shop-work.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

*GEORGE C. CLARK,
Assistant in Chemical Laboratory.

*JOHN BENNETT SCOTT,
Instructor in English.

***Absent during session of 1898-9.

CHARLES THOM, A. B., A. M.,
Instructor in Biology.

*ARTHUR D. TERREL,
Instructor in Drawing.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

WILLIAM HENRY TURNER, B. S.,
*Instructor in Military Science and Tactics, and Acting Commandant
of Cadets.*

WILFORD ALEXANDER NORRIS, M. D.,
Lecturer on Materia Medica.

**A. E. HACKETT,
Lecturer on Climatology.

FELLOWS.***

HENRY HERRENLEBEN, B. L.,
Fellow in Germanic Languages.

JOHN LAWRENCE GERIG, A. B.,
Fellow in Romance Languages.

ROYALL HILL SWITZLER, A. B.,
Fellow in Mathematics.

CLARENCE MARTIN JACKSON, B. S.,
Fellow in Biology.

BERT MUNDAY, B. S.,
Fellow in Physiology.

THOMAS ELMER MCGAUGH, B. L.,
Fellow in Pathology and Bacteriology.

OTHER OFFICERS.

J. G. BABB, A. M., LL. B.,
Proctor.

R. B. PRICE,
Treasurer.

*HENRY WOOD,
Treasurer of the School of Mines.

IRVIN SWITZLER,
*Registrar, Secretary to the Council and the various Faculties, and to
the Experiment Station.*

*CHARLES L. WOODS,
Secretary to Executive Committee, School of Mines.

**In the service of the U. S. Weather Bureau.

***Fellows are elected for one year and are required to teach five or
six hours a week.

JOHN R. KIRK,
Examiner of Schools.

WALTER K. STONE, A. B.,
Librarian.

MRS. LOUISE NORWOOD FITCH,
Matron.

GEORGE W. HENDERSON,
Steward of Club Houses.

MISS MARY B. IGLEHART,
Stenographer.

JOSEPH SHELBY MADDOX,
Assistant Librarian.

ALLEN T. BROUGHTON,
Assistant in Law Library.

JOSEPH CUNNINGHAM,
Assistant in Law Library.

*MISS MAUD B. MITCHELL,
Assistant Librarian.

.....
Superintendent of Unsold College Lands.

For officers and staff of Experiment Station, see Index.

Preachers and Lecturers.

PREACHERS TO THE UNIVERSITY.

REV. J. P. GREEN, D. D., Liberty.....January 21, 1899
REV. ALEXANDER PROCTOR, D. D., Independence..February 19, 1899
REV. A. BOSCHE, S. J., St. Louis.....April 23, 1899

The pastors of the churches in Columbia at various times.

LECTURERS BEFORE THE UNIVERSITY.

E. B. Craighead, LL. D., Fayette, "Our Debt to Greek Civilization;"
January 9, 1899.

Mrs. Maud H. Lacy, Old Orchard, Vice-President for Missouri of the
National Household Economic Association, on February 9, 1899. Subject:
"Domestic Economy in State Universities."

W. J. S. Bryan, Principal of the St. Louis High and Normal School,
"The Duty of the Nation, the State and the Individual;" February 22,
1899.

College of Agriculture and Mechanic Arts:

Hon. J. R. Rippey, of Columbia, Mo., Secretary Missouri State Board
of Agriculture, "The Missouri Roadster—His Conformation, Breeding and
Management."

Hon. N. F. Murray, of Oregon, Mo., Vice-President State Horticult-
ural Society, "The Production of Nursery Stock." Twenty-four lectures
and 24 laboratory exercises.

Hon. L. A. Goodman, of Westport, Mo., Secretary State Horticultural
Society, "Commercial Orchardling and Small Fruit Growing." Twenty-
four lectures and 24 laboratory exercises.

H. Van Leeuwen, of Effingham, Kansas, "Practical Dairy Manage-
ment." Twenty-four lectures and 24 laboratory exercises in butter and
cheese making.

Dr. T. E. White, of Columbia, Mo., State Veterinarian, "The Spread
of Contagious Diseases and the State Quarantine Regulations." Twenty
lectures.

A. E. Hackett, Esq., of Columbia, Mo., Assistant Director Missouri
Climate and Crop Service, "Climatology." Twenty lectures.

General Information.

Departments of the University.

The University comprises the following departments :

- I—Graduate Department.
- II—Academic Department.
- III—Normal Department.
- IV—Department of Law.
- V—Department of Medicine.
- VI—Department of Military Science and Tactics.
- VII—College of Agriculture and Mechanic Arts, embracing
 - A. *School of Agriculture.*
 - B. *Experiment Station.*
 - C. *School of Mechanic Arts,*
 - D. *School of Engineering.*
- VIII—The School of Mines and Metallurgy.

[These departments II to VIII are established and made co-ordinate by the statutes of Missouri.]

Historical Statement :

The Legislative Act establishing the University was passed 11 February, 1839.

The University was located at Columbia, Boone county, June 24, 1839. The cornerstone of the Main building was laid July 4, 1840, and this is generally accepted as the date of the *foundation* of the University. Courses of instruction in Academic work were begun on April 14, 1841. A Normal department was established in 1867. The College of Agriculture and Mechanic Arts and the School of Mines and Metallurgy were made departments of the University in 1870—the School of Mines and Metallurgy being located at Holla, where it was formally opened November 23, 1871. The Law department was opened in 1872; the Medical department in 1873; and the Engineering department in 1877. The Experiment Station was established, under act of Congress, in 1888. The Missouri State Military School was created a department of the University in 1890. In 1868 the State gave aid for the first time to the University—a sum of \$10,000. On January 9, 1892, the Main building of the University at Columbia was destroyed by fire. In the following March the Legislature gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000 and by

\$25,000 additional for a new building at Rolla. The 39th General Assembly appropriated \$33,000 to build an additional club house at Columbia.

For a fuller statement about the College of Agriculture and Mechanic Arts, see Index.

A. THE DEPARTMENTS AT COLUMBIA.

REQUIREMENTS FOR ADMISSION BY EXAMINATION.

The following are the requirements for admission by examination to the various Departments:

To the Graduate Department:

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for. See announcement of this Department.

To the Academic Department:

The following are the requirements for admission by examination to the Freshman class in the Academic Department:

TO THE A. B. COURSE:

1. **LATIN.** Five books of Caesar's Gallic War, four orations of Cicero,, and Allen's Prose Composition. For two books of the Gallic War, eight books of Eutroplus, or an equivalent of the *Viri Romae*, may be substituted. Mastery of the essentials of etymology and syntax is expected.

2. **GREEK.** Three books of Xenophon's Anabasis, Harper and Castle's Greek Prose Composition, Goodwin's Greek Grammar.

The work may be accomplished in two years. A student may, for the session of 1899-1900, substitute for the second year's work in Greek one year of History or one year of Science. In that case he will be admitted if he is prepared to take up the Anabasis. White's First Greek Book will be useful for doing the first year's work.

3. **ENGLISH. A. In General.** No pupil will be accepted in English whose written work is notably defective in point of *spelling, punctuation, idiom, or division into paragraphs.*

B. English Composition.—(1) The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself, from a considerable number set before him in the examination paper. One of the topics chosen must be taken from the books assigned for general reading under English Literature. (2) In place

of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of his school compositions, at least six in number, on topics taken from the prescribed course of reading, and certified to by his last English instructor as in his opinion the unaided work of the pupil.

C. *English Literature.*

1. For General Reading and Composition work :

1899: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the Mohicans;" Lowell's "Vision of Sir Launfal;" Hawthorne's "The House of the Seven Gables."

1900: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" "Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "Last of the Mohicans;" Tennyson's "Princess;" Lowell's "Vision of Sir Launfal."

1901: Shakespeare's "The Merchant of Venice;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Ancient Mariner;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal;" George Elliot's "Silas Marner."

2. For Minute and Critical Study :

1899: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Carlyle's "Essay on Burns."

1900: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

1901: Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

D. *English Grammar.*—There will be included in the requirement for entrance knowledge of the leading facts of English Grammar, and proper tests of such knowledge will be made a part of the examination.

4. MATHEMATICS. Algebra and Plane Geometry. The equivalent of Milne's High School Algebra and of Phillips and Fisher's Plane Geometry is required.

5. HISTORY. General History—the equivalent of the work given in Meyers' "General History."

TO THE B. L. COURSE:

1. **LATIN.** Same as for A. B. See above.
2. **ENGLISH.** Same as for A. B.
3. **MATHEMATICS.** Same as for A. B.
4. **SCIENCE.** One year's work, with laboratory practice, in any one of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.
5. **HISTORY.** (A.) General History (as above for A. B.); (B.) History of England and of the United States—the equivalent of the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." For the present the equivalent of the work given in Green's "Short History of the English People" will be accepted in lieu of the requirements in History of England and of the United States.

TO THE B. S. COURSES:

1. **FRENCH OR GERMAN**—two years' work.
The two years' work in German, when offered, shall mean the ability to read at sight ordinary prose, to translate simple English sentences into German; and it includes a correct pronunciation of the language. The two years' work in French, when offered, implies the same ability in French as has been described above in German. For the French or German an equivalent amount of Latin may be substituted.
2. **ENGLISH.** Same as for A. B.
3. **MATHEMATICS.** Same as for A. B.
4. **SCIENCE.** One year's work each, with laboratory practice, in any two of the following Sciences: Biology (Zoology and Botany), Physics, Chemistry.
5. **HISTORY.** Same as for B. L.

The time to be given to each of the above requirements, and the character of the work required in each subject for admission to the Freshman class, are given in detail in the courses outlined for schools approved by the University. See page 33.

Value in Units.

If a unit be defined as a year's work in a subject with five (5) periods a week in the class room or laboratory, and a period as about forty (40) minutes, then the subjects required for admission to the Freshman class have the following values in units: English, 3 units; Latin, 3; Greek, 2; Mathematics, 3; History, 1 or 2; Physics, 1; Chemistry, 1; Biology, 1.

The requirements for entrance by examination to the several Academic courses expressed in terms of units are as follows:

<i>A. B.</i>	<i>B. L.</i>	<i>B. S.</i>
English 3 units	English 3 units	English 3 units
Math. 3 units	Math. 3 units	Math. 3 units
History 1 unit	History 2 units	History 2 units
Latin 3 units	Latin 3 units	Fr. or Ger.. 2 units
Greek 2 units	Science 1 unit	Science 2 units
<hr/>		
Total.. ...12 units	Total.. ...12 units	Total.. ...12 units

In the B. S. Courses the student may offer for two years of French or German two years of Latin. The University will for the present accept this substitution, but does not recommend it. In case the student presents but one year of Latin, he shall receive credit for that amount and shall then be "not passed" on one year of French or German, which deficiency must be made up in addition to the requirements for the course. For the session of 1899-1900 the applicant for admission may substitute for the second year in Greek in the A. B. Course a second year in History or one year in Science. It should be understood, however, that no substitute may be offered for any study unless the student has, in the entrance examination, made a passing grade on the substitute.

To be admitted to the Academic Department by examination, the student must pass (70 per cent) on at least ten (10) units; but no candidate who has failed in Mathematics will be admitted to Engineering courses. The deficiency of two units may be in one subject or in two. All deficiencies must be made up under the direction of the Professor in charge of that subject on or before the end of the period for entrance examinations the following September. If the student is permitted to make up his deficiency in the University, such work shall not count toward a degree.

In case the student offers advanced work (Freshman, Sophomore, etc.) in any subject in lieu of units required for entrance, such substitution will be given due consideration; but students to whom this privilege may be allowed must make up those entrance requirements in which they are deficient.

To the Normal Department:

A student who has been admitted to any one of the Academic Courses will be permitted to enter the Normal Department.

To the Law Department:

For terms of admission, see announcement of this Department.

To the Department of Medicine:

See announcement of this Department.

To the Schools of Agriculture and Mechanic Arts:

See announcement of these Schools.

To the School of Engineering:

The terms of admission to this School are the same as those to the B. S. Courses in the Academic Department, but a student conditioned in Mathematics will not be admitted to this School, and if the student substitutes Latin for French or German he must afterwards make up the French or German.

Time of Examinations:

Examinations for admission will be held at the University May 26 to June 3, and September 7 to 11, 1899. All persons desiring to enter the University at the opening of the session in the fall of 1899, except those holding certificates of graduation from approved schools and those who have already otherwise fulfilled the entrance conditions, must present themselves at the Registrar's office, room 4, Academic Hall, at 8:30 a. m., Thursday, September 7. They will then receive complete directions as to examinations.

The programme of examinations is as follows:

Thursday, September 7.—9 a. m., English; 2 p. m., Mathematics.

Friday, September 8.—9 a. m., Latin, French, German; 2 p. m., Physics.

Saturday, September 9.—9 a. m., Biology, Greek; 2 p. m., General History.

Monday, September 11.—10 a. m., English History; 2 p. m., Chemistry.

Acceptance of Grades:

Students who do not hold diplomas from approved schools (pages 26-32), may present their grades in any subject, but the acceptance of these grades in place of an examination in that subject rests wholly in the judgment of the Professor of the subject.

Advanced Standing:

Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance. Of his fitness for advanced work he must satisfy, by examination or otherwise, the Professor of the subject in which he wishes to take work higher than the Freshman.

Special Students:

Special students will be admitted to the University without passing the regular examination required for entrance under the following conditions: (1) They must be at least 21 years of age; (2) they must show good reason for not taking a regular course; (3) they must pass such examination or other tests as shall demonstrate fitness to pursue profitably all the studies in the subjects selected by them; (4) they will not be allowed to take work in more than two subjects with such kindred work as the Head Professor may suggest; (5) the advisory committee for each special student shall consist of the Head Professor or Professors with whom the student desires to pursue work. Special students are expected to do specially good work in the subjects which they choose. If at any period of the session their work becomes unsatisfactory in one or both of the two major subjects, their connection with the University shall be severed by the Dean of the Department.

Irregular Students:

Students that for good reasons and with the approval of their advisers do not take the subjects required in any course in the order laid down in the Catalogue are classed as irregular students. They must, however, meet the regular entrance requirements and are subject to all the laws of the University pertaining to studies and to conduct with the solitary exception that for good reasons and with the consent of their advisers they may violate the order in which subjects are laid down in the courses of study.

ADMISSION FROM APPROVED SCHOOLS.

The University will admit without examination to the Freshman Class in any Course for which they have been duly prepared, such graduates of an approved school as bring proper credentials of the fact that they are recommended for that class by the school authorities; and it will admit free of entrance, library and incidental fees for the first year the student graduating from the school with the highest honors.

The diploma will not be accepted as a credential. The student must present a certificate, signed by the Superintendent or Principal, showing that he has completed a course for which the school has been approved. Blank certificates will be furnished by the Registrar upon application.

The following is a list of the approved schools:

APPROVED SCHOOLS.

Approved for all Courses in all Undergraduate Departments.

School.	*Sup't and Principal
Boonville High School, Boonville.....	D. T. Gentry.....
Butler Academy, Butler.....	Miss E. A. Ludwig.....
Cameron High School.....	{ B. Riggs.....
	{ Miss Bertha Ensign.....
Chillicothe High School.....	{ Oliver Stigall.....
	{ John W. Barton.....
Columbia High School.....	{ R. H. Emberson.....
	{ E. B. Cauthorn.....
Columbia Normal Academy.....	Geo. H. Beazley.....
Culver Military Academy, Culver, Ind.....	A. F. Fleet.....
Hannibal High School.....	{ R. B. Simonson.....
	{ Miss Gertrude Ashmore..
Kansas City High School.....	{ J. M. Greenwood.....
	{ E. C. White.....
Kemper Family School, Boonville.....	T. A. Johnson.....
Kirkwood High School.....	W. S. Dearmont.....
Michigan Military Academy, Orchard Lake...	W. A. Butts.....
Marshall High School.....	{ T. E. Spencer.....
	{ L. C. Nelson.....
Mary Institute, St. Louis.....	E. H. Sears.....
Paris High School.....	W. D. Christian.....
Quincy (Ill.) High School.....	Wm. F. Gelger.....
Sedalia High School.....	{ G. V. Buchanan.....
	{ J. D. Wilson.....
Slater High School.....	{ J. M. Bailey.....
	{ J. M. Major.....
Smith Academy, St. Louis.....	Chas. P. Curd.....
St. Joseph High School.....	{ Edward E. Neely.....
	{ C. E. Miller.....
St. Louis High School.....	{ F. Louis Soldan.....
	{ W. J. S. Bryan.....
University Academy, Columbia.....	G. B. Welch.....
Wentworth Military Academy, Lexington.....	Sanford Sellers.....
Woodson Institute, Richmond.....	B. G. Shackelford.....

*Where two names are given, the first is that of the Superintendent and the second that of the Principal.

Approved for Law, Medicine, Agriculture, Engineering, School of Mines, and B. L. and B. S. Courses in the Academic Department:

School.	Sup't and Principal.
Appleton City Academy, Appleton City.....	G. A. Thellman.....
Bethany High School.....	J. R. Hale.....
Calro (Ill.) High School.....	T. C. Clendenen.....
Carthage High School.....	John Snyder.....
Carrollton High School.....	W. J. Stevens.....
Clinton High School.....	Edwin Gray.....
East St. Louis (Ill.) High School.....	E. H. Stroeter.....
Fort Smith (Ark.) High School.....	Mrs. R. R. Quisenberry..
Greenville (Miss.) High School.....	G. M. Hollday.....
Harrisonville High School.....	Ignatius McCutchan....
Higginsville High School.....	John Richeson.....
Independence High School.....	J. L. Holloway.....
Jefferson City High School.....	E. E. Bass.....
Joplin High School.....	A. T. Fisher.....
Kansas City Manual Training School.....	W. C. Sebring.....
Keokuk (Iowa) High School.....	S. M. Barrett.....
Lamar High School.....	Wm. L. C. Palmer.....
Lancaster High School.....	J. L. Bankson.....
Leavenworth (Kan.) High School.....	J. D. Elliff.....
Lexington High School.....	J. M. Gwinn.....
Louisiana High School.....	G. B. Morrison.....
Macon City High School.....	Geo. E. Marshall.....
Maryville High School.....	H. C. Richmond.....
Mexico High School.....	H. G. Murphy.....
Miami High School.....	W. A. Evans.....
Moberly High School.....	H. D. Demand.....
Monroe City High School.....	A. W. Riggs.....
Montgomery City High School.....	R. R. Rowley.....
Mound City High School.....	W. F. Jamison.....
Nevada High School.....	Henry King.....
Oregon High School.....	B. F. Duncan.....
Richmond High School.....	C. A. Hawkins.....
Rockport High School.....	D. A. McMillan.....
Springfield High School.....	Miss M. E. Shea.....
Trenton High School.....	E. E. Barnett.....
Webb City High School.....	J. A. Whiteford.....
Westport High School.....	J. C. Lilly.....
Webster Groves High School.....	R. S. Nichols.....
	W. C. Williams.....
	J. P. Coleman.....
	J. C. Pike.....
	Miss Ethel Swearingen..
	D. L. Roberts.....
	L. J. Hall.....
	J. E. Dunn.....
	U. W. Gallaher.....
	J. Fairbanks.....
	L. Tomlin.....
	B. F. Guthrie.....
	A. G. Young.....
	J. D. Higdon.....
	S. A. Underwood.....
	Sarah J. Milligan.....

Approved for Law, Medicine, Agriculture, Engineering, School of Mines, and B. S. Courses in the Academic Department :

School.	Sup't and Principal.
Edina High School.....	Chas. S. Davis.....
Memphis High School.....	A. P. Settle.....
St. Louis Manual Training School.....	C. M. Woodward.....

Approved for Law, Medicine, Agriculture, School of Mines, and B. L. and B. S. Courses in the Academic Department :

School.	Sup't and Principal.
Brookfield High School.....	(J. U. White..... H. R. McCullough.....

Approved for Law, Medicine, Agriculture, School of Mines, A. B. B. L. and B. S. Courses in the Academic Department

School.	Sup't and Principal.
Shelbina High School.....	J. T. Vaughn.....

Approved for Law, Medicine, Agriculture, School of Mines, and for A. B. Course in the Academic Department.

School.	Sup't and Principal.
Brookfield College, Brookfield.....	Harry C. Meyers.....
Buchanan College, Troy.....	W. F. Roberts.....
Carthage Fitting School, Carthage.....	L. E. Robinson.....
Iberia Academy, Iberia.....	G. B. Smith.....
King City High School.....	G. F. McKinney.....
Kidder Institute, Kidder.....	G. W. Shaw.....
Mt. Vernon Academy, Mt. Vernon.....	G. H. Pollard.....
North Missouri Academy, Salisbury.....	G. C. Briggs.....
University Military School, Mobile, Ala.....	Julius T. Wright.....
Vandalla High School.....	T. B. Ford.....
Watson Seminary, Ashley.....	A. R. Coburn.....
West Plains College, West Plains.....	J. T. Outen.....

Approved for Law, Medicine, Agriculture, School of Mines, and for B. L. and A. B. Courses in the Academic Department.

School.	Sup't and Principal.
Clarksburg College, Clarksburg.....	Warren I. Moore.....
Marionville Collegiate Institute, Marionville...	M. L. Curl.....
Warrensburg High School.....	{ L. W. Martin.....
	{ J. M. Gordon.....

Approved for Law, Medicine, Agriculture, School of Mines, and for B. L. Course in the Academic Department.

School.	Sup't and Principal.
Christian College, Columbia (1).....	Mrs. W. T. Moore.....
Gallatin High School.....	A. B. Alexander.....
Greenfield High School.....	J. M. Taylor.....
Kirksville High School.....	{ C. S. Brother.....
	{ O. H. Lind.....
Milan High School.....	W. C. Thompson.....
Poplar Bluff High School.....	John T. Withers.....
Rich Hill High School.....	G. W. McGinnis.....
Rogers Academy, Rogers, Ark.....	Rev. J. M. Scraggs.....
Shelbyville High School.....	Ira Richardson.....
Windsor High School.....	Hugh A. Smith.....

(1) Classical Course

Approved for Law, Medicine, School of Agriculture, School of Mechanic Arts and School of Mines for session of 1899-1900.

Ash Grove High School.	Butler High School.
Ashland High School.	Bellevue Collegiate Institute,
Aurora High School.	Caledonia.
Avalon College, Trenton.	Carleton College, Farmington.
Albany High School.	Cartersville High School.
Appleton City High School.	Central Female College, Lexington.
Baptist College, Webb City.	Chillicothe Normal and Business
Bevier High School	Institute, Chillicothe.
Bonne Terre High School.	California High School.
Buffalo High School.	Canton High School.
Belton High School.	Carruthersville High School.
Bishop Robertson Hall, St. Louis.	Centenary College, Palmyra.
Bolivar High School.	Centralla High School.
Bowling Green High School.	Central Wesleyan College, War-
Brunswick High School.	renton:

Approved Schools

31

Charleston High School.	Lathrop High School.
Christian Brothers College, St. Louis.	Lebanon High School
Christian Orphan School, Fulton.	Liberty High School.
Christian College, Weaubleau.	Liberty Female College, Liberty.
Clarence High School.	Lindenwood College, St. Charles.
Corder High School.	Linneus High School.
Cottey College, Nevada.	Marcelline High School.
Dadeville Academy, Dadeville.	Marshfield High School.
De Soto High School.	Missouri Wesleyan Institute, Cameron.
Edina High School.	Morrisonville College, Morrisonville.
Evangelical Lutheran Parochial School, Altenburg.	Mountain Grove High School.
Elsberry High School.	Malden High School.
Eldorado Springs High School.	Manual Training School, St. Louis.
Excelsior Springs High School.	Marvin Collegiate Institute, Fredericktown.
Fayette High School.	Maryville Seminary, Maryville.
Ferguson High School.	Megqueler Seminary, Boonville.
Fulton High School.	Memphis High School.
Grand River College, Gallatin.	Northwest Missouri College, Albany.
Gallatin High School.	Neosho High School.
Grandin High School.	New London High School.
Granby High School.	Odessa College, Odessa.
Hermann High School.	Odessa High School.
Holden High School.	Osceola High School.
Hamilton High School.	Otterville College, Otterville.
Hardin College, Mexico.	Perry High School.
Hopkins High School.	Pike College, Bowling Green.
Hosmer Hall, St. Louis.	Presbyterian College, Independence.
Howard Payne College, Fayette.	Princeton High School.
Hume High School.	Pierce City Baptist College, Pierce City.
Humphreys Academy, Humphreys.	Pierce City High School.
Huntsville High School.	Plattsburg College, Plattsburg.
Jamesport High School.	Plattsburg High School.
Kahoka High School.	Pleasant Hill High School.
Kingston High School.	Presbyterian College, Avalon.
Kirkwood Military Academy, Kirkwood.	Rolla High School.
Lamar College, Lamar.	Ridgeway High School.
La Plata High School.	Rugby Academy, St. Louis.
Lee's Summit High School.	St. Cecella's Seminary, Holden.
Lamonte High School.	

Seneca High School.	Sweet Springs High School.
Sikeston High School.	Tarkio High School.
Southwest Baptist College, Bollivar.	Thayer High School.
Sturgeon High School.	Tipton High School.
Synodical College, Fulton.	Toensfeldt Educational Institute, St. Louis.
St. Charles College, St. Charles.	Unionville High School.
St. Louis Seminary, Jennings.	Versailles High School.
St. Paul's College, Concordia.	Wellsville High School.
St. Vincent's College, Cape Girardeau.	West Plains High School.
Salem High School.	Walther College, St. Louis.
Savannah High School.	Webster Groves High School.
Scarritt Collegiate Institute, Neosho.	Willow Springs High School.
Shelbyville High School.	Woodland College, Independence.
Stanberry Normal, Stanberry.	Woodson Collegiate Institute, Richmond.
Stephens College, Columbia.	

The Missouri School for the Deaf and Dumb, at Fulton, has been approved for the College of Agriculture and Mechanic Arts, and the graduates will be admitted without examination to the first year's course in Agriculture and Mechanic Arts.

Normal Schools:

Graduates of the three State Normal Schools in the advanced Latin course of study as recently established will be admitted to the University without examination and permitted to enter without condition the Freshman Class in the B. L. and B. S. Courses in the Academic Department, and the Freshman Class in Engineering. They may also enter the Departments of Law and Medicine, the School of Agriculture, and the School of Mines at Rolla. In any course, they may enter as much higher than Freshman as in the judgment of the Professors their qualifications permit.

Examiner of Schools:

The position of Examiner of Schools has been established by the Board of Curators to facilitate the work of bringing the secondary schools into close connection with the University. Mr. John R. Kirk, Columbia, Mo., formerly State Superintendent of Public Schools, entered upon the duties of this office on 16 January, 1899.

CONDITIONS FOR THE APPROVAL OF SCHOOLS.

No school will be approved for the A. B., B. L., B. S., or Engineering Courses until it has been visited by the Examiner and his report has been adopted by the University Committee on Approved Schools.

SUMMARY OF REQUIREMENTS FOR APPROVAL IN THE ACADEMIC AND ENGINEERING COURSES.

A. B. Course.	B. L. Course.	B. S. and Eng. Courses.
English 3 yrs.	English 3 yrs.	English 3 yrs.
Algebra 2 yrs.	Algebra 2 yrs.	Algebra 2 yrs.
Plane Geom... 1 yr.	Plane Geom... 1 yr.	Plane Geom... 1 yr.
Gen. History.... 1 yr.	Gen. History.... 1 yr.	Gen. History.... 1 yr.
Latin 3 yrs.	English and Advanc- ed U. S. Hist 1 yr.	English and Advanc- ed U. S. Hist 1 yr.
Greek 2 yrs.	Latin 3 yrs.	French or Ger. 2 yrs.
	Biology, Chem. or Physics ... 1 yr.	Biology, Chem. or Physics..... 2 yrs.

English and advanced United States History must follow and not precede General History. A full year's work in English History may be substituted for this requirement.

The work in Biology, Chemistry, or Physics must include individual laboratory work by the student. In the B. S. and Engineering Courses one year's work in each of two sciences must be given.

In the B. S. Courses, for the present, two years' work in Latin may be substituted for the two years of French or German, but the substitution is not recommended.

For the A. B. Course an additional year of History may be substituted for the second year of Greek, but the substitution is not recommended.

It is earnestly hoped that all the Secondary Schools of Missouri will soon be able to make their courses four years long. Other branches of study usually taught in Secondary Schools are not mentioned here. The three years' Course outlined prescribes merely the minimum required by the University for entrance to its Freshman class.

1. *Latin*, not less than five (5) periods a week, continued not less than three (3) years.

In this time it is expected that the student will acquire such a vocabulary and such a knowledge of inflections and syntax as to be able to read readily simple Latin prose, with accurate quantitative pronunciation of the words. The best method of reaching these results can not be given here. They will be found fully stated in the "Report of Committee on Secondary Schools" in the section on Latin. It may be said, however, that correct pronunciation in the teacher is indispensable to correct pronunciation in the pupil, and that in the acquisition of a vocabulary and the mastery of inflections, nothing can take the place of frequent reviews.

It is expected that the student in three years will read five books of Caesar's Gallic War and four of Cicero's Orations. For two books of the Gallic War, eight books of Eutropius or an equivalent in time of the *Vitae Romae* may be substituted where it is preferred.

If the students are immature, it will be found best to use some simple beginner's book, and to follow this by *Entropius* or *Viri Romae* as a bridge to Caesar. If, however, the students are mature, it will be found that no bridge to Caesar is needed, provided that some strong beginner's book is used and the students are required to master it before taking up Caesar.

The reading should be accompanied by a careful and systematic review of grammatical forms, and by a study of the leading principles of syntax. At least one exercise a week should be given to rendering English into Latin. The Roman method of pronunciation is strongly recommended, and teachers are urged to give strict attention to accurate pronunciation according to quantity from the outset. Students will be admitted who have not been trained in the Roman method; but they will work at a great disadvantage throughout the entire course. The Mythology of Greece and Rome and the history of the Roman people should be carefully taught. Map-drawing is valuable for impressing upon the mind the geography of the Ancient World.

2. *English*, not less than five (5) periods a week, continued not less than three (3) years. It is recommended that one half of the time allotted to English be given to the study of literature, by which is meant not the study of a manual on the history of literature, but literature itself in the selected works of representative authors. Masterpieces, as a whole, suited to the attainments of the class, should be read in class and carefully examined, while other works may be assigned as collateral reading, of which written reports should be required.

In the first year, along with the literature, frequent practice in Composition, with or without a text-book on Rhetoric, is strongly urged.

In the second year, the literature is to be continued throughout, and with the exercises in Composition, formal Rhetoric may be introduced, or if previously begun, continued. In the teaching of Composition and Rhetoric, chief emphasis should be thrown upon practice in writing. If formal Rhetoric is taught as a separate discipline, it should be of an elementary character, and contributory to the Composition.

In the third year, along with literature and composition, grammar, based on historical principles, might be profitably studied. In case English is extended through four years, such grammatical study, in our judgment, should be postponed until the last year.

In the fourth year, in connection with a wider range of reading in literature, an outline or syllabus or a brief history of the literature may be conveniently used, but, possessing little or no culture value, it should always be subordinated to the study of literature itself, and reserved, if used at all, for the last year of the course.

If only three years be given to English, the course outlined for these three years will have taken into view English (1) as a means of ex-

pression, (2) as a literature, (3) as a language—all so intimately connected, however, that the proper study of each will bear indirectly upon the other two.

NOTE.—Excellent and inexpensive editions of English and American Classics are now offered by many of our publishing houses. The teacher of English will, doubtless, have a preference for one or another of these series, or for some works of one series and some of another.

3. *Mathematics*, not less than five (5) periods a week, continued not less than three (3) years, and devoted exclusively to Algebra and Geometry. Any other study in Mathematics given in addition to these must be given in additional time. In these three years it is expected that the student will finish Algebra and Plane Geometry. We require the full equivalent of what is contained in Milne's High School Algebra and Phillips and Fisher's or Bowser's Plane Geometry. Bright students, under good instruction, will be able to finish in the three years the Algebra, Plane Geometry and several books (if indeed not the whole) of Solid Geometry. For the fourth year we recommend that Solid Geometry be completed, and also Plane Trigonometry.

4. *Science*.—It is expected that not less than five (5) periods a week for an entire year be given to each of two sciences. Of the five periods, at least three (3) should be devoted to laboratory work. For this no outside preparation is required of the pupil. The remaining periods may be given to text-book work and lectures and experiments illustrating the text. The two Sciences must be taken from this group—Biology (Botany and Zoology), Physics and Chemistry. If Biology be chosen, half a year may be given to Botany and half a year to Zoology; but we recommend that the whole year be given to either one or the other of these branches of the subject. We *recommend* that every school teach all three of these Sciences, and moreover provide good instruction in Physical Geography and Meteorology.

5. *History*, not less than five (5) periods a week for two (2) years. The first year shall be devoted to General History equivalent to the work given in Myers' General History. The second year shall be devoted to the History of England and of the United States equivalent to the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." For the present a year's work in the History of England, the equivalent of the work given in Green's "Short History of the English People," will be accepted in lieu of the second year's requirements.

It is impossible to understand the life, the literature, or the institutions of the ancient world without an accurate study of Mythology. We therefore recommend that every school make provision for this most important study. Some schools may see fit to combine it with the study of History,

others with that of Literature, and others may prefer to give four periods a week to Latin or Greek, and the fifth period of each week to Mythology. Other schools may provide for it in other ways. But, in our opinion, no school should, under any condition, omit adequate treatment of the subject. There are some excellent text-books. We especially recommend Guerber's "Myths of Greece and Rome." Valuable auxiliary reading may be found in Church's Stories from Homer, Virgil, Herodotus, the Greek Tragedians, etc. Any school would be amply repaid by adding to its library, without further inquiry, any book of stories bearing the name of Alfred J. Church. Some of them are in Macmillan's School Library, and most of them are published by Dodd, Mead & Co., New York. The teachers of the classics find in them quite as much pleasure as their pupils.

6. *Greek*, not less than five (5) periods a week for not less than two (2) years.

In this time the student is expected to learn thoroughly the declension of nouns and adjectives, the conjugation of verbs, and the ordinary principles of syntax. He should be able to read with facility ordinary Greek prose, such as Xenophon's *Anabasis*, and to translate easy sentences from English into Greek. The knowledge of the accent must be insisted on. To secure this end, we recommend for the first year:

White's First Greek Book and Gleason's Gate to the *Anabasis* (Ginn & Co., Chicago).

For the second year:

Goodwin's Greek Grammar (Ginn & Co., Chicago); Xenophon's *Anabasis* (three books), Harper and Wallace (American Book Co., Chicago); Harper and Castle's Greek Prose Composition.

This requirement is made of those schools only which desire to prepare students for the Freshman class of the A. B. course.

Any school that gives two years' instruction in Greek, as outlined above, may omit all instruction in science; but we strongly *recommend* that every school, besides teaching Greek, give at least one year to thorough work in at least *one* of the Sciences mentioned above under No. 4. For the A. B. course, Biology will prove most valuable.

7. *Modern Languages*.—Schools which prepare students for the B. S. course or for the Engineering courses should give two years' work in German or two years' work in French, instead of two years' work in Latin.

The requirements in French or German represent an amount of knowledge which should be gained by two years of consecutive study, five times a week. Thorough acquaintance with the elements of the grammar is of course expected. In addition, a considerable amount of proficiency in translating at sight into English will be required. To obtain this proficiency, students must have careful and systematic training in reading

at sligh
addition

In
are the
tions of
Holt &
topher

We
require
prepara
given fo
library

By
ing, wit

By
Thi
quires fo
be emph
reputati
understo
justify t

Scho
laborator
it should
step is to
together
rather su
do nothi
reading r

If it
taining li
ries. Pr

Organiza

The
fessors an
It is the
the Unive
other Tea

The l
of all the

Buildings and Equipments:

Location.—The University of the State of Missouri is located near the center of the State, in Columbia, a town of about 5,000 inhabitants, situated half way between St. Louis and Kansas City.

It is conveniently reached from the east, north and west by the Wabash Railroad and connecting lines. The opening of the Missouri Midland Railroad, which will be completed by September 1, 1899, or earlier, renders access to it easy from the south, and southwest. This road will connect with the Missouri, Kansas and Texas Railroad at Kennard, and will afford a direct route to Columbia to persons living on that line, and to those living on the Missouri Pacific, Frisco, and Kansas City, Fort Scott and Memphis Railroads.

The surrounding country is elevated, well drained and diversified. It is a limestone region, remarkable for its healthfulness. The University Campus includes 32 acres of undulating ground in the southern part of the town. The Experiment Farm lies one square south of the Campus, and comprises 768 acres. The Horticultural grounds (a part of the Farm) are one square east of the Campus and include about 30 acres.

Buildings.—The University has the following buildings:

The Observatory, Medical building, four Club-houses, Agricultural Farm buildings, Experiment Station, Greenhouse (new), Law building (new), Chemical Laboratory (new), President's house (1867), Museum (new), Agricultural College (1871), Engineering (new), Mechanic Arts (new), Power-house (new), Academic Hall (new), Hospital (new).

We give a brief description of our *new* buildings:

The Law building, 68x114 feet, contains two stories and a basement. Its library rooms are large and well lighted.

The Chemical Laboratory, 132x90 feet, is equipped with a system of exhaust ventilation capable of effecting a change of air every ten minutes.

The Museum, 140x100 feet, contains in the center, the Museum proper, 37x100 feet, two stories high, and entirely fire-proof. On the right is the department of Geology and Mineralogy, and on the left that of Botany and Zoology. These wings have six and eight rooms respectively, one of which is a large lecture hall, 28x40 feet.

The Engineering building, 145x78 feet, is arranged for Physics, and for Civil, Mechanical, and Electrical Engineering. It has 32 rooms, in addition to two lecture halls, 28x40 feet.

The Mechanic Arts building, 108x117 feet, has six shop-rooms, 40x40 feet; an exhibit hall, 25x40 feet; two offices, 16x18; one drawing-room, 40x40; store-rooms, an engine-room, etc. The machinery is driven by a 60-horse power Corliss engine supplied with steam from the power-house. The building is lighted from a dynamo in the basement, and is thoroughly ventilated by a fan.

The Power-house, 72x86 feet, contains a plant of five boilers aggregating 600-horse power. From this plant all the buildings are heated by a system of brick tunnels six and a half feet high by four broad. Through these tunnels are carried steam and water pipes and electric light wires.

The new Horticultural Laboratory consists of a central building 30x30 feet and two wings, each 22x30 feet. It is heated by steam, and is so arranged that each compartment maintains a different temperature. Thus it is possible to grow plants that require various degrees of heat. The boiler-house is a separate building, of such size and arrangement that additional steam may be put in for heating three or four times the present area under glass. The entire laboratory is constructed after approved modern methods. It has stone foundation below ground, pressed brick walls to a height of three feet, T iron frame filled in with white pine, grooved sash bars, and best American A glass. The glass walls of the main portion rise eight feet above the brick, and the roof slopes upward to twenty-seven feet above the ground floor in the center, giving room for tall tropical plants. The walks between the benches are of granite. It is water-proof.

The new Academic Hall, 319 feet long, with an auditorium in one wing and a library in the other, contains three stories, besides a basement seven feet above ground. It is provided with appliances for direct and indirect heating, with fans for ventilation, and with thermostats for the regulation of temperature. The auditorium, 74x113 feet, seats comfortably 1,500 people. The apartments (six in number) for the exclusive use of young women, contain everything conducive to study, comfort, and indoor exercise.

Hospital.—The 40th General Assembly accepted the offer of Mr. W. L. Parker, of Columbia, who offered to give \$15,000 toward the construction of a Hospital, provided that \$10,000 should be contributed from any other source. The plans for this building have been prepared, and it will be constructed at once. It will cost \$25,000 exclusive of equipment, for which the funds have been collected from private sources. This building will greatly strengthen the Medical College and add much to the comfort and safety of students who become ill.

The principal buildings of the University are grouped around a quadrangle near the center of the Campus. The quadrangle is open toward the north, with department buildings on the sides, and the large Academic Hall closing the south end. In the center are the grand old Ionic Columns that supported the original Academic Hall erected in 1840 and destroyed by fire on January 9, 1892. The buildings are substantially built of red pressed brick, with stone trimmings. They have division walls of brick, roofs of slate, ceilings of cement laid on steel laths, and floors of tile or of polished maple. They are heated by steam, lighted by

gas and electricity, and are all supplied with water by the city water-works. The University has built at its own expense an admirable system of sewers.

Libraries.—The General University Library consists of 27,107 bound volumes, carefully selected, and 33,050 unbound pamphlets and reports. The best literary and scientific periodicals are taken, and a large number are given yearly (see Index, under "Gifts to the University"). The Law Library, of about 4,050 volumes (included in the above estimate), is in the Law building. The Medical Library receives regularly a number of medical periodicals. Moreover, each Chair has its special technical library.

Laboratories and Museums.—Facilities for practical instruction in the sciences are provided in the museums of Zoology, Geology, and Agriculture, and in various laboratories. The University has now in regular use twenty laboratories of science and technology, and four drawing-rooms; one general and three special. The laboratories are as follows:

CHEMISTRY: Four Laboratories—General Chemistry (1st year), Qualitative Analysis, Quantitative Analysis, Agricultural Chemistry and Experiment Station work.

PHYSICS: Three Laboratories—For work of different grades, besides small rooms for special work.

MINERALOGY AND GEOLOGY: Two Laboratories.

ASTRONOMY: A well equipped Observatory for practical instruction and observation on the part of the students. See Index under "Observatory."

BIOLOGY: Four Laboratories—One for General Biology, and three for advanced work of various grades.

ENTOMOLOGY: One Laboratory.

PHYSIOLOGY: One Laboratory.

ANATOMY: One Laboratory.

BACTERIOLOGY: One Laboratory.

HORTICULTURE: One Laboratory.

ENGINEERING: Three Laboratories—For Civil, Electrical, and Mechanical Engineering, besides smaller rooms for special work.

SHOPS: Four—One for bench work in wood, a forge room, a wood lathe room, and a machine shop. See Index.

DRAWING ROOMS: One for general drawing, and three for special drawing in Civil, Electrical, and Mechanical Engineering, respectively.

Each of the Laboratories, Museums, Shops, and Drawing Rooms mentioned above occupies at least one room, and in some cases more.

Experiment Station.—The Agricultural Experiment Station is on the Horticultural grounds. Bulletins giving the results of experiments are issued at intervals. The Station is provided with an outfit of meteoro-

logical instruments, and daily observations are made by an officer of the U. S. Weather Bureau. See Index, "Experiment Station."

Club-houses.—The University has four club-houses which furnish about 200 young men with rooms and board, and about 200 more with board only. Two of these are substantial brick buildings on the Campus, affording accommodations for about 165 students. The other club-houses are wooden buildings, and have rooms for 45 students.

For information about the buildings and equipment of the School of Mines and Metallurgy at Rolla, see page 62.

Lectures and Recitations:

Lectures and recitations in all departments, except that of Law, are held on six days in the week.

Religious Exercises:

Religious exercises are held every morning. They consist of a hymn by the choir, readings from the Old and New Testaments, a brief prayer, and a closing hymn by the congregation.

These exercises are made as attractive and beneficial as possible. During the present session distinguished members of various churches have been invited to preach to the students and Faculty.

In Columbia there are churches of nearly all the prominent denominations. The University advises its students to attend regularly the services at the churches of their parents. The students maintain an efficient chapter of the Young Men's Christian Association, and one also of the Young Women's Christian Association. (See "Societies" below.) The University has much of moral and religious influence, but is non-sectarian.

Provisions for Young Women:

All departments of the University are open to women. In the lecture-rooms they receive the same instruction and meet the same intellectual requirements as the young men. There are special rooms—six in number—furnished with admirable equipment for health and comfort, and presided over by a matron, who has charge of all the young ladies in attendance. One of these rooms is fitted up as a gymnasium, containing all the appliances necessary for physical culture. During lecture hours the young ladies, when not attending lectures, are expected to be in their waiting-rooms, or in the University library, or at their respective homes.

The University has no boarding department; but many of the families of Columbia take boarders, and students find no trouble in securing, at reasonable rates, the comforts and refinements of home life.

STUDENTS.

Discipline:

In the government of the University, the President and the Faculty rely chiefly upon the sense of duty of the student corps. The student is expected to pursue his studies with diligence, to attend classes regularly,

and to live in the exercise of morality and good behavior. The removal of those who fail to meet these requirements is demanded in the interest of the University and the better class of students. Students are under the direct supervision of the University only when on the Campus, but they are responsible for their conduct wherever they may be.

Directions for New Students:

1. New students will first present themselves for examination. This should be done *before paying entrance fees*. For dates of examinations, see the Calendar, page III.
2. After passing the entrance examinations, the students must pay to the Treasurer the amount required. See "Expenses," page 44.
3. The Treasurer's receipt should be at once presented to the Proctor, who will enroll the student's name and give to him his class-card, with instructions how to have it filled.
4. If assistance is needed in obtaining board, application should be made to the Proctor.

STUDIES.

Regulations in Regard to Studies:

No student in any department of the University may have more than 18 hours a week in the lecture room, unless the course prescribed for the year requires a greater number of hours and he is following that course exactly.

Academic students are expected to spend not less than 15 nor more than 18 hours a week at lectures or recitations.

One hour in the lecture-room is considered equal to two and one half in the laboratory, the drawing-room, the shop, and the commercial-room.

Class-cards taken out at entrance must be properly filled, countersigned, and deposited with the Registrar, within three days after they have been issued. In all departments cards are signed by the Dean first and then by the President.

Students that enter the University in the first semester and wish to make any change in their class-cards for the second semester, are required to take out their cards again in the last week of the first semester, and to return them to the Registrar duly filled and approved on or before the first day of the second semester. Students that fail to comply with this requirement must pay a fee equal to one-half of the regular fees for the session, unless the delay has been clearly unavoidable.

Studies in other Departments:

Students registered in one department may take work in other departments for which, in the judgment of the Professors concerned, they

are prepared; but only with the consent of the Dean or the Advisers of the department in which the student is registered. Students taking work in another department than that in which they are registered are subject as respects this work to the rules of the department in which the work belongs.

1. Academic students may take Anatomy or Physiology, or both, in the first year of the Medical course, or Bacteriology in the second year; Drawing, Book-keeping, Shop-work, and any other work not below the Freshman (Academic) grade, in the College of Agriculture and Mechanic Arts; and any instruction offered in the Normal department. None of this instruction, however, shall count toward any Academic degree unless it is allowed in the regulations respecting studies for such degree.

2. Law students may take any instruction offered in other departments of the University, but it shall not count toward any degree in Law.

3. Medical students in the first year may take any work offered in the Academic department, and the College of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but such work shall not count toward the degree of M. D., unless it is included in the regular Medical course.

4. Students in the Schools of Agriculture and Mechanic Arts may elect in the Junior years the courses in Physiology and Hygiene from the first year of the Medical course, and from the Academic or Normal department any subject for which they are prepared, and which is germane to the work of the Schools. Electives taken as indicated count toward the degree of B. Agr.

5. Engineering students may take in their Freshman and Sophomore years any instruction offered in the Academic department, the Normal department, in the Schools of Agriculture and Mechanic Arts, or Anatomy and Physiology in the first year of the Medical course; and in their Junior and Senior years they may take anything offered in the University; but such instruction shall not count toward a degree in Engineering.

6. No work shall count toward the Normal diploma, except so far as it may conform to the requirements specified in the announcement of the Normal department.

7. Instruction in Military Science and Tactics is open to students in all departments.

8. Students may take work in the Summer School (see Appendix) and receive a maximum credit therefor of six hours for a term of six weeks or twelve hours for the session of twelve weeks.

Graduate Studies:

A number of graduate courses are offered. For details see announcement of Graduate Department.

Examinations:

1. Examinations at the end of each semester close the studies pursued to that point. Re-examination for change of grade when the grade is 70 or more shall not be allowed in any case. For all successful examinations for the removal of conditions, i. e., where the first grade received is above 50 and below 70, the grade of 70 shall be given.

2. All special examinations, except for change of grades, and the acceptance of grades from other institutions, are in the discretion of the professors.

Class Honors:

The honor of valedictorian is awarded in the various departments to that student who has the highest grade.

In granting degrees, the following distinctions are made: Students graduating with a final average grade of 70 and below 95 receive the diploma; those graduating with a final average grade of 95 or more may have inserted in their diplomas *cum laude*, *magna cum laude* or *summa cum laude*, in accordance with the quality of their work. But misconduct or unexcused absences may forfeit the right of any student to such distinction.

Reports:

From all departments, except those of Law and Medicine, reports of students are sent, at the close of each semester, to the parents or guardians, showing their standing in the subjects that they are pursuing.

EXPENSES.***Fees and Deposits:***

Academic and Normal students and those in the various Schools of the College of Agriculture and Mechanic Arts pay an entrance, library, and incidental fee of \$5.00.

Law students (regular or special) pay \$50 a year for the Junior and Senior years and \$5.00 for the graduate year. Students entering the Junior class late will not be entitled to any reduction in the amount of the fee, except as stated below. Books cost about \$35 a year.

The Medical student in first and second years pays an entrance, library and incidental fee of \$5.00; for the third year, \$50; for the fourth year, \$50.

The Engineering student pays an entrance, library and incidental fee of \$5.00 for each year of his course.

State Cadets in the Academic Department or in the College of Agriculture and Mechanic Arts, including the School of Engineering, pay no entrance, library, and incidental fee, but make the laboratory and other deposits required of other students. If they take any study in Law or Medicine whatsoever, they must pay the full fees of that department.

Graduate students in any department of the University pay an entrance, library and incidental fee of \$5.00 a year, and make the usual deposits, including laboratory deposits if they take laboratory work. If they take undergraduate work in any of the classes in Law or Medicine where tuition is charged, they must pay the full fees in that department. Graduates of colleges and other Universities will not be classed as graduate students if they take undergraduate work.

No part of the entrance, library and incidental fee (\$5.00) is remitted for late entrance or refunded for withdrawal.

Students in Law or Medicine who pay the full tuition fee of \$50 and who withdraw before the opening of the second semester, will, upon application, have refunded to them in the earlier days of March, one-fourth ($\frac{1}{4}$) of the fees for the whole session; but such students must, before the close of the first semester, file with the President written application addressed to the Board of Curators for the refunding of that part of the fees. Students that enter during the second semester in classes in Law or Medicine in which full tuition of \$50.00 is charged will pay three-fourths ($\frac{3}{4}$) of the fees for the entire session.

In all the laboratories except those of Chemistry, and in certain departments of the Shop, a deposit of \$5 for a session, or any part thereof, is required. In Chemistry the deposit is \$5 for each semester. This deposit, less deduction for loss arising from cost of material or from injury, is returned at the end of the laboratory course in any session. Only Fellows are exempt from making these deposits—this exemption applying only to those laboratories in which they give instruction.

In all cases where the original deposit does not cover the cost of material used and the damage to property, an additional charge will be made which shall be sufficient to cover the excess of material and damage over the original deposit. Where damage or loss is suffered by a laboratory, it will be assessed against the deposits of the students using the laboratory at the time of the damage or loss, unless such damage or loss can be traced to some individual student or students. No deposits for Medical laboratories shall be exacted of Medical students who pay full tuition (\$50.00).

The charge for a diploma is \$3 and for a certificate \$2.

Laboratory deposits and rent of rooms in the Club-houses must be paid to the Proctor; all other fees must be paid at the Boone County National Bank, to the Treasurer of the University. *All fees and deposits must be paid in advance.*

Any student who does not pay promptly his dues of any sort to the University, shall be liable to suspension or expulsion.

The student who has attained the highest rank in the graduating class of any "approved school" will be permitted to enter the Academic department of the University, or the College of Agriculture and Mechanic Arts (including Engineering) without the payment of the entrance, library and incidental fee for the first year.

Students who fail to comply with the regulation requiring class-cards in the second semester to be filled, approved and filed with the Registrar by or before the first day of the semester, must pay a fee equal to one-half the fees for the session, unless specially excused. Excuses will not be granted except for grave reasons.

For statement of expenses in the School of Mines and Metallurgy (at Rolla, Missouri), see page 63.

The four Club-houses lodge 165 students, and can furnish meals at small cost to about 400. In the two large brick buildings situated on the Campus—dormitories numbered I and II, known as the University Boarding Club—room rent for each student is from \$12 to \$28 a year, according to the location of the room, and permits to dining room privileges are \$8 a year. These charges are payable on or before the first of September and include room rent, the attention of servants, heat, water, and the aid of a steward who supervises the housekeeping, the kitchen and the dining room. In order to secure a room in any Club-house, it is necessary to make a deposit of \$5 which will be credited on the room rent when paid. Any student who does not room in a Club-house may secure from the University Proctor a permit to take meals in the dining room upon payment of \$8 a year. Students who rent rooms or who take out meal permits for the regular session are required to make a deposit of \$5.00 each as security against damage to, or loss of, University property. Students in the Summer School who rent rooms in the University Boarding Club, are required to pay \$3 a term (six weeks), and in the Agricultural Club, \$2 a term. All such students must make a property deposit of \$3, returnable at the end of the term if no damage to property has been done by the student. The cost of room rent, board, lights and washing to those who enter a Club is about \$2 a week. Each room in the Agricultural Boarding Club, and in dormitory No. I of the University Boarding Club, is furnished with a double bedstead, a table and two chairs. Each room in dormitory No. II of the University Boarding Club is

furnis
pants
bulldo
system
bath
lights.

T
missar
their
versity
ricultu
vise ti
buildin

In
except
thus or

St
for Te
vacant
which

Ex
do not
at the
of the
not inc
the Sh
Course
fee of \$

On
duly m
from th

Ea
a small

Proctor, the chairman of the Discipline Committee and the Dean of the Academic Department.

As the accommodations of the club-houses are limited, it is necessary for students who wish to engage rooms to make early application for them; they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for them must be made to the Proctor of the University, J. G. Babb.

DEGREES AND CERTIFICATES.

Degrees:

The following degrees are now conferred by the University:

In the Academic department, Bachelor of Arts (A. B.), Bachelor of Letters (B. L.), Bachelor of Science (B. S.), Master of Arts (A. M.), Master of Science (M. S.), and Doctor of Philosophy (Ph. D.).

In the Normal department, Bachelor of Pedagogics (B. P.).

In the School of Agriculture, Bachelor of Agriculture (B. Agr.), Bachelor of Science in Agriculture (B. S.), and Master of Agriculture (M. Agr.).

In the Law department, Bachelor of Laws (LL. B.), and Master of Laws (LL. M.).

In the Medical department, Doctor of Medicine (M. D.).

In the School of Engineering, Bachelor of Science (B. S.) in Civil Engineering, in Electrical Engineering, in Mechanical Engineering and in Sanitary Engineering, respectively. The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), are also given for graduate work.

The degrees of B. S. in Mining Engineering, in Civil Engineering, and in Chemistry and Metallurgy, and the graduate degrees of Civil Engineer (C. E.), and Engineer of Mines (E. M.), are given in the School of Mines and Metallurgy, at Rolla, Missouri. It gives also the degree of B. S. in an Academic Course in Science.

The Master's degrees and the degree of Doctor of Philosophy (Ph. D.), are conferred upon the completion of sufficient graduate work. For particulars, see announcement of the "Graduate Department."

Except that of Doctor of Laws (LL. D.), no degrees are conferred *honoris causa*.

For further information, see the respective departments.

Certificates:

A certificate in Surveying, one in Pedagogics, one in the two-years' course in Agriculture, one in the four years' course in Mechanic Arts, and also one in Military Science and Tactics, are given.

Three certificates (in Assaying, Surveying, and Electricity respectively) are given at the School of Mines and Metallurgy, Rolla.

For further information, see the various departments.

COMMENCEMENT EXERCISES.

The Commencement Exercises occupy the four days ending with the first Wednesday in June of each year. For specific days, see Calendar, page III.

PRIZES.

Curators' Scholarships:

By order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College (including Engineering) without the payment of the first year's entrance and library and incidental fee.

The student attaining the highest grade, or who shall be first in merit, in taking the degree of A. B., B. S., or B. L., in the graduating class of any of the universities or colleges composing the Missouri College Union, will be admitted to the Law or the Medical department of the University for the first year without payment of any tuition fees. The Missouri College Union is now composed of Washington University, Westminster College, William Jewell College, Drury College, Central College, Missouri Valley College, and the University of the State of Missouri.

Free scholarships in the Academic department are offered to such students from the "Masonic Home of Missouri," St. Louis, and the "Odd Fellows Home," Liberty, as may be prepared to enter the University.

Students who hold Fellowships (see page 52) are admitted to the University without the payment of entrance, library and incidental fees, or deposits in the laboratories in which they give instruction.

Stephens Medal:

Founded by the Hon. James L. Stephens, of Columbia, and annually awarded for the best oration by a member of the Senior class. The prize consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

The Laus Astronomical Medal:

For conditions of award, see Index under "Astronomy."

Dachsel Prize:

Ten dollars in money, by the late Charles Dachsel, engineer, of Jefferson City, Mo., is awarded for the best thesis on the Steam Engine.

McAnally Medal:

For the best English essay. See Index under "English."

Rollins Scholarships:

See page 51.

Law Prize:

See announcement of Law Department.

The William J. Bryan Prize:

Established by the Board of Curators through a generous donation by the Hon. W. J. Bryan, of Lincoln, Nebraska. The prize consists of a medal, for the purchase of which the annual income from \$350 is available, and is awarded for the best essay on some subject pertaining to the Science of Government. In 1899-1900 the William J. Bryan prize will be awarded for the best essay on the "Development of the Judicial System of the United States," under the following conditions:

1. Competition is open to all students of the University.
2. The essays submitted shall contain between 2,000 and 2,500 words.
3. They must be in the hands of the Registrar of the University not later than 12 o'clock noon, of the first Saturday in May.
4. Each essay shall be signed with a fictitious name and be accompanied with a sealed envelope containing the real name of the writer and bearing the fictitious name on the outside.

Declamation Prizes:

Particulars are given in the announcement of the work in Elocution.

Medals Offered by the Literary Societies:

The literary societies in the University offer medals to the winners in their inter-society contests in declamation, essay, oration, etc.

SOURCES OF AID TO STUDENTS.***1. The Rollins Aid Fund:***

Anthony W. Rollins, M. D., an honored citizen of Boone county, father of the Hon. James S. Rollins, dying in 1845, left by his will the sum of \$10,000 in trust for the purpose of educating such poor and indigent youths of Boone county, both male and female, as might be unable to ed-

ucate themselves. Three-fourths of the annual interest on the fund, according to the directions of the donor, is to be devoted to the education of the youths of Boone county, and the remaining one fourth is to be added to the interest-bearing principal. The fund amounts now to about \$40,000. The President of the University is required, at each annual Commencement, to invite the citizens who may be present, to subscribe for the enlargement of this fund. The beneficiaries of this charity are annually selected by the President of the University from the indigent youths of Boone county, male and female. In compliance with the wishes of the donor, the selection is made with reference to the moral as well as the intellectual qualities of the youths inclined to avail themselves of the advantages of the fund, preference being given, in the selection of boys, to such as evince an inclination to preach the gospel.

Applications for aid from the Rollins Aid Fund must hereafter be in writing; a blank form will be furnished by the Proctor, with whom it must be filed after it has been filled. The applicant must appear in person at the opening of the first semester, September 12, as no reservation will be made. No application should be made or will be received, unless the applicant has passed the examinations for entrance and has been duly admitted to the University. Hereafter a part of the money given to each beneficiary may be paid at the opening of the first semester and a part at the opening of the second semester.

2. *The James S. Rollins University Scholarships:*

In 1889 the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri, for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"*First*—The College of Arts, for the degree of A. B., fifty dollars.

"*Second*—The College of Arts, for the degree of B. S., fifty dollars.

"*Third*—The College of Agriculture and Mechanic Arts, for the degree of B. Agr., fifty dollars.

"*Fourth*—The College of Law, for the degree of LL. B., fifty dollars.

"*Fifth*—The College of Medicine, for the degree of M. D., fifty dollars.

"*Sixth*—The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the *Junior class*, in each of the colleges desig-

nated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In according these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

"With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and a greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted."

3. Cadetships:

Each Senator and Representative of the General Assembly of Missouri may appoint two cadets from his district. For further information, see report of the Department of Military Science and Tactics.

4. Curators' Scholarships:

See page 49.

5. Fellowships:

Fellowships are annually established in any subject where such additional teaching force may be required. Students holding these are put down in the list of the Faculty as Fellows. They are appointed by the Board of Curators, are required to teach five or six hours a week, and receive for this service \$200. They are required to devote the rest of the time to graduate work approved by the Professor whom they assist and by the President of the University. Only those who have completed the longest undergraduate course given in the University in any subject are eligible to the fellowships in that subject, and they must be recommended to the Board of Curators by the Professor of said subject. Students holding these fellowships are not required to pay entrance, library, and incidental fees, or to make laboratory deposits in the laboratory in which they assist.

6. Club-houses:

See page 46.

7. Labor on Farm and Garden:

The sum of \$1,200 has been provided by the General Assembly for student labor on Farm and Garden during the present biennial period. Applicants should see the Dean of the College of Agriculture and Mechanic Arts.

MAKING ONE'S WAY AT THE UNIVERSITY.

There are many students now enrolled who are paying their way by their own exertions. Many of them save enough during the session and the summer vacation to pursue their work without interruption, while others drop their studies at the University for a year and engage in teaching and other occupations. Some of the ablest men in this and other states have paid their way by the labor of their hands. One of them is now representing Missouri in Congress; another was recently a Judge of the United States Court, while a third is the chief of one of the divisions of the U. S. Department of Agriculture.

The Y. M. C. A., a student organization to its credit be it said, has appointed a committee to canvass the town for work and distribute it among students needing it. Too much praise can not be given for the encouragement which this body of Christian students and the teachers and officers of the University have given to poor young men in supporting themselves by their own labors.

COST OF ATTENDING THE UNIVERSITY.

The estimates of the cost of a year's attendance at the University given below were prepared by a student thoroughly familiar with the matter and are in every respect trustworthy. They are based upon actual experience. The first estimate is taken from students' note-books, but lest it be too low, about \$15.00 has been added to their figures.

1. LOW ESTIMATE.

	Acad. Agr. Engr.	Med.	Law.
Board, room, fuel, lights at A. B., or U. B. Club.	\$ 75 00	\$ 75 00	\$ 75 00
Books	10 00	25 00	35 00
Incidentals	12 00	12 00	12 00
Laundry	8 00	8 00	8 00
	\$105 00	\$120 00	\$130 00

2. CONSERVATIVE ESTIMATE.

	Acad. Agr. Engr.	Med.	Law.
Board, room, fuel, lights.....	\$ 108 00	\$ 108 00	\$ 108 00
Books	10 00	25 00	35 00
Incidentals	30 00	30 00	30 00
Laundry	12 00	12 00	12 00
	\$ 160 00	\$ 175 00	\$ 185 00

3. LIBERAL ESTIMATE.

	Acad. Agr. Engr.	Med.	Law.
Board, room, fuel, lights.....	\$ 180 00	\$ 180 00	\$ 180 00
Books	15 00	30 00	40 00
Incidentals	45 00	45 00	45 00
Laundry	15 00	15 00	15 00
	\$ 255 00	\$ 270 00	\$ 280 00

These figures do not include tuition, and they apply to young men only. Young women could scarcely bring their expenses below the "Liberal Estimate" on account of the greater cost of board. With a good dormitory for the young women they would not be at such a disadvantage.

While the figures given under "Low Estimate" seem quite small, many students make them smaller still. It is safe to say that students can not enjoy anywhere such excellent advantages at such low cost as at the University.

The student who prepared these estimates, remarks: "One boy last year was fortunate enough to be enabled to do a full year's work, pay all expenses by his own efforts and go away in the spring with more money than he had upon entering."

PHYSICAL CULTURE.

Gymnasium:

The Thirty-eighth General Assembly appropriated the sum of \$7,500 for the equipment of a gymnasium, and \$1,300 for the improvement of the athletic grounds. Rooms in the new Academic Hall have been set aside for the gymnasium proper, and fitted with baths, lockers, etc. A fine equipment has been put in. There is a separate gymnasium, thoroughly equipped, for women.

Athletic Grounds:

In addition to the gymnasium there are athletic grounds, with baseball and foot-ball fields. These are enclosed, a grand-stand has been erected, and tracks constructed for bicycling and running. These, with the tennis courts, provide ample means of exercise for every student in the University. In recognition of the generosity of members of the Rollins family toward the Athletic Association, the field has been named by the Curators "The Rollins Athletic Field."

STUDENTS' PERIODICALS.

The students maintain and manage two periodicals. These are the *Independent* (biweekly), and the *Saritar* (annual).

SOCIETIES.

1. *Literary:*

There are connected with the University at Columbia twelve literary societies for students, the "Graduate Club," the "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Medical Society," the "Agricultural Society," the "Engineers' Society," the "Missouri State University Debating Club," the "New Era Debating Club," and the "Biological Club." These societies hold weekly meetings for improvement in debate, declamation, oratory and composition, and form an important means of culture, especially in speaking and writing.

For societies at the School of Mines, see page 64.

2. *Young Men's Christian Association:*

The object of this organization, which dates its existence in the University from January 18, 1890, is the same as in other institutions of learning: namely, to represent and in every way to promote practical Christianity, particularly among the students. The work has been rich in good results.

Devotional exercises are held every morning at 8 o'clock and also every Sunday afternoon. Classes hold weekly meetings for the study of the Bible, and special religious services are held from time to time.

A movement has been set on foot to erect a building to cost at least \$40,000, for the Young Men's and Young Women's Christian Associations. For this purpose the former has already pledged the sum of \$6,500, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in all the appointments necessary for the work of the Association.

A lot immediately in front of the University Campus has been purchased for the site of this building at a cost of \$2,650, of which all but about \$800 has been paid.

The Association is at present using the old building which stood on the lot when purchased, having fitted up a reading-room and a room for games for the benefit of the Association and its student friends. On the rear of the lot a tennis court has been built at a cost of \$26, which is one of the advantages offered by the Association.

At the beginning of each scholastic year a committee from the Y. M. C. A., to be recognized by their badges, meet students at the trains and freely render them valuable assistance in securing board by introducing them to friends and to officers of the University, and by various acts of kindness. A letter sent in advance to the President of the Young Men's Christian Association will receive prompt and cheerful attention.

A committee was appointed last summer to canvass the town for work for students making their own way. As a result of the efforts of this committee work amounting to over \$1,000 was found and distributed among students needing it.

The General Secretary, employed by the Association, has his office at the Association building, and is ever ready to render any aid to students that may be in his power.

The Association also offers, annually, to the public, particularly to the students, at actual cost, a series of literary and musical entertainments of a high order of excellence.

During the last session the following lectures and concerts were thus given: Dr. F. W. Gunsaulus, "Cromwell;" Boston Ladies' Symphony Orchestra; Dr. A. A. Willits, "Sunshine;" Dr. John De Motte, "The American Boy and Python Eggs."

3. *Young Women's Christian Association:*

The Association, which is similar in its aims and methods to the foregoing, was organized April 2, 1891. Its object is the advancement of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Both of these Associations have enjoyed the hearty encouragement of all the authorities of the University.

4. *Musical:*

There also exists among the students Glee, Mandolin, Guitars, and Banjo clubs, which form an attractive feature of University life.

The University Choral Union was organized in the autumn of 1898 for the study of chorus work. It has an active membership of 125 voices, including many townspeople as well as students from all departments. Weekly meetings are held in one of the rooms of Academic Hall. A Music Festival consisting of two concerts, afternoon and evening, was given May 1. The organization affords students an opportunity for musical training at the nominal cost of twenty-five cents for initiation and the price of the music.

5. *Athletic Association:*

For several years an Athletic Association has existed among the students. Under its direction and encouragement a Foot-ball team, Tennis teams, and a Base-ball team are each year organized; and in addition, athletic exhibitions (indoor and outdoor) are given. The Spring Games on the New Athletic Field are intercollegiate throughout the State. The women play Basket-ball.

6. Alumni:

The Alumni Association is composed of graduates of the University. It holds an annual meeting on Tuesday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this Society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about university life.

The initiation fee for membership is \$2. This is the only charge imposed upon members, as the Association possesses an endowment of \$3,000, the income of which is used in defraying expenses of the annual meeting, etc. It is hoped that all graduates of the University, whether academic or professional, will become members of the Association. An application for membership, inclosing membership fee, addressed to N. T. Gentry, Secretary, Columbia, Missouri, will lead to prompt enrollment.

The officers of the Association are: Isidor Loeb, '87, Columbia, President; E. D. Phillips, '77, Kansas City, First Vice-President; Mrs. N. T. Gentry, '89, Columbia, Second Vice-President; N. T. Gentry, '84, Columbia, Secretary; C. B. Rollins, '74, Columbia, Treasurer.

In June, 1898, the University published an alphabetical list of its graduates with their addresses. Graduates are requested to furnish the University Registrar, Irvin Switzler, with information pertaining to such compilation.

A movement for a stronger organization of the Alumni has been inaugurated. The Alumni constitute, in fact, one of the largest elements in the life of the University, and, sufficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State. For number of Alumni, see Index, under "Alumni."

LOCAL CHAPTERS OF THE ALUMNI ASSOCIATION.

Baton Rouge, La.:

C. H. Stumberg, President.

W. R. Dodson, Secretary.

Chillicothe:

Scott C. Miller, President.

Katherine M. Leaver, Secretary.

Columbia:

Dr. M. D. Lewis, President.

R. H. Emberson, Secretary.

Macon City:

R. W. Barrow, President.

Dr. R. Gillaspay, Secretary.

Marshall:

Judge James Cooney, President.

_____ Secretary.

Moberly:

Judge B. S. Head, President.

F. G. Ferris, Secretary.

Richmond:

Judge G. W. Miller, President.

J. T. Bottom, Secretary.

Fort Smith, Arkansas:

W. B. Cravens, President.

J. B. Gass, Secretary.

Jefferson City:

_____ President.

Frank M. Brown, Secretary.

Kansas City:

Hon. W. S. Cowherd, President.

James Black, Secretary.

Denver, Colorado: -

Thomas N. Lavelock, President.

F. P. Dixelbiss, Secretary.

Sedalia:

Louls Hoffman, President.

Hon. Chas. E. Yeater, Secretary.

Sweet Springs:

Hon. R. W. Prigmore, President.

Judge V. C. Yantis, Secretary.

St. Louis:

Houston H. Crittenden, President.

J. E. Bishop, Secretary.

GIFTS TO THE UNIVERSITY.**To the General Library:**

The gifts of Mrs. R. L. Todd and Mr. Irvin Switzler deserve special mention.

	Vols.		Vols.
Pres. Jacob Schurman.....	1	American Hereford Ass'n.....	2
R. T. Nesbit.....	1	Ralph Sadler.....	1
Union Club.....	2	L. M. Curry.....	1
J. Dymond.....	1	Woman's Med. Coll. of Pa....	1
Cambridge Observatory.....	1	University of Tennessee.....	1
A. Lytton.....	2	C. B. Wells.....	1
Irvin Switzler.....	92	Baroness Burdette-Coutts.....	1
Mrs. R. L. Todd.....	178	T. W. Higginson.....	2
Lippincott & Co.....	1	Dr. F. C. Hicks.....	9
Van Daell.....	1	Wm. G. Bird.....	1
W. V. Byars.....	6	J. L. Harnage.....	1
Currency Reform Club.....	2	Mrs. Palmer.....	1
Nelson, Chesman & Co.....	1	State of New York.....	1
J. F. Walsh.....	2	State of Michigan.....	2
Nebr. Historical Society.....	1	Hon. Webster Davis.....	3
Southern R. R. Co.....	1	Jas. W. Skelly.....	1
Royal Society of Canada.....	1	National Educational Ass'n...	1
Iowa Academy of Science.....	1	State of Minnesota.....	1
Princeton University.....	1	A. D. Foster.....	1
N. Y. Life Insurance Co.....	1	Isaac Sharpless.....	1
Luella Agnes Owen.....	1	Hinds & Noble.....	1
G. M. Dawson.....	1	Col. W. F. Switzler.....	2
U. S. Government.....	265	State of Missouri.....	12
Indiana Academy of Science....	1	Mo. Hort. Society.....	2
American Bar Association.....	1	Meadville Theolog. Seminary..	1
State of Missouri.....	28	F. W. Hockett.....	1

A. Coles.....	1	California State Gov't.....	1
Hudson-Kimberly Pub. Co.....	1	American Hereford Cattle	
Wisconsin Experiment Station.	1	Breeders Ass'n.....	1
W. L. Oliver.....	1	U. S. Government.....	2
Mo. Med. Association.....	1	Smithsonian Institution, Pam-	
Harvard Club.....	1	phlets	407
N. Y. University.....	5	Pamphlets from other sources..	408
Maynard, Merrill & Co.....	5		

The following periodicals have been presented to the University Library :

Post Dispatch.....	Daily	Columbia Statesman.....	Weekly
St. Joseph Herald.....	Daily	Waverly Times.....	Weekly
St. Joseph Gazette.....	Daily	State Tribune..	Daily and Weekly
Hannibal Journal.....	Daily	The North Missourian.....	Weekly
Kansas City Mail.....	Daily	The Barton Co. Free-Press.	Weekly
Monitor, Lathrop.....	Weekly	Monroe City Democrat.....	Weekly
Linneus Bulletin.....	Weekly	Southeast Missourian.....	Weekly
Pierce City Democrat.....	Weekly	St. Charles Banner-News...	Weekly
Miss. Valley Democrat....	Weekly	Northeast Missourian.....	Weekly
Marshall Democrat-News...	Weekly	Christian Advocate.	
Salisbury Democrat.....	Weekly	Christian Register	
Columbia Herald.....	Weekly	Christian Guide.	
Ladonia Herald.....	Weekly	Christian Observer.	
Shelbina Democrat.....	Weekly	Central Baptist.	
Nodaway Democrat.....	Weekly	Western Christian Union.	
Mexico Intelligencer.....	Weekly	Western Watchman.	
Boonville Independent.....	Weekly	Advocate of Peace.	
Plattsburg Leader.....	Weekly	Herald of Golden Age.	
Mexico Ledger.....	Weekly	Food and Home.	
Kidder Optic.....	Weekly	K. C. Live Stock Indicator.	
Marionville Free-Press....	Weekly	Medical Mirror.	
Saline County Progress....	Weekly	The Journal of Amer. Med. Ass'n.	
Westliche Post.....	Weekly	Pediatrics.	
Lebanon Rustic.....	Weekly	School and Fireside.	
Quiltman Record.....	Weekly	Industrialist.	
Saline County Republican...	Weekly	Western College Magazine.	

To the Laws Observatory :

Cambridge University Observatory, Cambridge, England.....	1 Book
University Observatory, Leipzig, Germany.....	3 Pamphlets
Dr. Th. Albrecht, Berlin.....	1 Pamphlet
Manora Observatory, Lussinpiccolo, Istria.....	1 Pamphlet
Mr. John Tebbutt, Windsor, New South Wales.....	1 Pamphlet

Yale University Observatory, New Haven, Connecticut.....1 Pamphlet
 Columbia College Observatory, New York.....2 Pamphlets
 Dr. T. J. J. See, Lowell Observatory, Flagstaff, Arizona.....1 Portrait
 Dr. T. J. J. See, Lowell Observatory, Flagstaff, Arizona.....4 Pamphlets
 Smithsonian Institution, Washington, D. C.....6 Pamphlets
 Nautical Almanac Office, Washington, D. C.....2 Books
 U. S. Weather Bureau, Washington, D. C.....1 Monthly Periodical
 Lick Observatory, Mt. Hamilton, Cal.....
2 Transparencies of total Solar Eclipse

To the Political Science Department:

	Vols.		Vols.
Hon. F. M. Cockrell.....	9	University of Wisconsin.....	1
Hon. John W. Kimball, Mass..	1	R. L. Todd, 108 pamphlets....	27
James W. Cosgrove.....	4	I. Switzler.....	24
University of Toronto.....	8	Indianapolis Monetary Com....	1

To the Department of Romance Languages:

	Vols.		Vols.
Charles Elliot Norton, Cambridge, Mass.....	10	P. Melara, Juticalpa, C. A.....	4
Payne Boulton.....	1	H. A. Smith, 5 pamphlets.....	10
Dr. P. Passy, Paris, France...	1	Anonymous friends, 10 pamphlets	10
Friends at Boston, 4 pamphlets	10	Anonymous friends, one subscription to <i>Journal des Debats</i>	
Friends at New York, 1 pamphlet	10	Dr. R. Weeks, two manuscript copies of ancient epics.	

To the Greek Department:

	Vols.
Ginn & Co., Perrin's Homer's Odyssey V-VIII (text ed.).....	15
Ginn & Co., Dyer's Apology and Crito of Plato (text ed.).....	25
Ginn & Co., Wecklein's Prometheus Bound (text ed.).....	20
Ginn & Co., D' Ooge's Antigone of Sophocles (text ed.).....	20

To the Horticultural Department:

	Vols.
Dr. M. Halleung.....	1
Henry Wallis, new varieties of grapes, rare seeds, plants.	
New Haven Nurseries, peach trees, 58 varieties.	
East Hill Nurseries, Nursery stock planter.	
Hon. L. A. Goodman, quantity of nuts for planting.	
Missouri Horticultural Society, old rare reports, volumes.....	13
Department Agriculture, 1,000 evergreens.	

General Information

61

Lockland Lumber Company, set of models for Green House Construction.

Goulds Mfg Co., "Kerowater" Spraying outfit.

Horticultural Committee of the Omaha Commission, Exhibition

Tables..... 7

To the Geological Department:

	Vols.
Thomas Beckwith, Charleston, Mo.....	20
Geological Survey, New York.....	1
Geological Survey, Canada.....	1
Geological Survey, New Jersey.....	1
Geological Survey, Iowa.....	1
Geological Survey, Missouri, 1,500 specimens Missouri rocks.	
Geological Survey, Missouri, 1,000 specimen trays.	
United States Geological Survey, 5 sheets, Geol. Atlas, U. S.	
United States Weather Bureau, daily weather charts.	

To the Agricultural Department:

	Vols.
E. M. Bass, Short Horn Herd Books.....	8
Aberdeen Angus Herd Book.....	1
Hereford Herd Book.....	1
Missouri Mining & Lumber Co., polished yellow pine panels.	
The Glucose Sugar Refining Co., 80 samples corn products.	
G. W. Waters, leaf tobacco in oak frame.	
G. W. Waters, wools and woolen manufacture.	

To the Medical Department:

Parke, Davis & Co., Detroit, fine line of sample drugs for teaching purposes.

To the Department of Electrical Engineering:

Gaston Daniels Electric Co., Keokuk, Iowa, 1 Gaston Lightning Arrester.
Wagner Elect. Manfg Co., St. Louis, punchings for two transformers.

To the Department of Mechanical Engineering:

Southwark Foundry Co., Philadelphia, 2 framed photo-lithographs of vertical triple expansion engines.
Heine Boiler Co., large counter shaft and pulleys for belt testing.
Heine Boiler Co., 2 large tanks for boiler testing.
Heine Boiler Co., 1 pyrometer.

Form of Gift by Will:

For the guidance of those contemplating a bequest to the University, the following brief form is suggested, and information given. The information states what is needful to make a valid will. The State will accept and be responsible for all money given to the University, paying thereon 5 per cent interest:

I give, devise and bequeath to the Curators of the University of the State of Missouri _____ for the purpose of _____.

[In Missouri the requisites to a valid will are as follows: 1. The testator if a male must be 21 years old to make a will of real estate; or 18 to make a will of personal estate. If a female at the age of 18, the testator is competent as to both realty and personalty. 2. The will must be in writing. 3. It must be signed by the testator or by some one at his direction in his presence. 4. It must be witnessed by two persons. 5. The witnesses must sign their names to the will in the presence of the testator.]

Any person may give, grant or devise money or property to the University. The statute provides that the money or the proceeds of the property shall be paid into the State Treasury to the credit of the Seminary Fund. Thereupon a State certificate of indebtedness will be issued, with interest at 5 per cent per annum, payable semi-annually. The interest so paid will be applied to the uses of the University in accordance with the law and in accordance with the wishes of the donor as expressed by him in making the gift, grant or devise. (See sections 8818, 8819, 8820 and 8821, Revised Statutes of Missouri, 1889.)

*B. THE SCHOOL OF MINES AND METALLURGY, AT ROLLA.**Buildings and Equipment:*

Main Building.—The buildings of the School of Mines are situated in the most elevated part of the town of Rolla. They are substantial brick structures, well ventilated and lighted. The Main building and the Mining laboratory are heated by steam. The Main building contains the assembly room, the library, lecture rooms for the Professors of Engineering, Mathematics, Physics, and for Academic work, the Physical laboratory, offices of Executive Committee and Director, etc. For the work in Engineering there is ample provision of field instruments, and a beginning has been made in the acquisition of testing apparatus.

Physical Laboratory.—The Physical laboratory has recently received several thousand dollars' worth of apparatus, and its equipment is being augmented from time to time. It is especially strong on the side of electricity, and comprises two dynamos, with which a small electric lighting plant is maintained.

Chemical Laboratory.—The Chemical laboratory is housed in a separate building, admirably adapted to its occupancy. This contains a lecture room, qualitative laboratory, quantitative laboratory, Professors' laboratory, assay laboratory, weighing room, evaporating room, preparation room, supply room, and basement. Facilities for heat, light and ventilation, and for carrying off foul or noxious gases, are excellent. Gas and water are supplied to each table. The assay laboratory, which is on the first floor, is amply provided with the proper furnaces, ore-crusher, pulverizing plate, balances, etc., and throughout the whole building the arrangement and equipment are such as to leave little to be desired.

Mining and Metallurgical Laboratory.—The Mining and Metallurgical laboratory, for which the 37th Assembly made an appropriation of \$25,000, is now completed. In addition to provision for instruction, both by lectures and by laboratory methods, in Mineralogy and in Geology, there is a special laboratory fitted with full-sized working machinery and the needed furnaces for practical illustration of the processes of ore-dressing and of metallurgy.

In the second story is a drawing room of about 600 square feet of floor space, lighted from the top by sky-lights.

Library.—The library contains about 3,700 volumes. It is well provided with scientific and technical works designed to afford the student an opportunity of supplementing his class-work by collateral reading. There is also a respectable collection of works of general literature. On its reading-tables the leading scientific periodicals and others of general or literary interest are accessible. The library is open daily from 8 a. m. to 4 p. m.

Club-house.—The students' club-house or dormitory is a handsome three-story building, erected in 1890, and contains room enough for twenty-five or thirty lodgers. The dining-room and kitchen can supply board for sixty. No charge is made for room rent, but each occupant of a room is required to make a deposit of \$5 to pay for any damages for which he may be responsible—the unconsumed portion of this fund being returned to him at the end of the session. The cost of board, including lights and heat, is at present \$13 a month. Anyone who may wish to engage a room should make an early application, accompanying it with the five dollar deposit.

Expenses:

The entrance, incidental, and library fee for the year is \$5. Students in the Chemical laboratory pay for material consumed and apparatus broken, to provide for which emergencies a deposit of \$10 is made at the beginning of the year, this sum being increased to \$15 for those taking a

"special" or "assay" course. The unused portion of this deposit is returned at the end of the year.

Board, fuel, lights, and washing, can be had for from \$12 to \$16 a month. The necessary expenses range from \$140 to \$200 a year.

Athletics:

Through the liberality of the Curators an athletic field has been inclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students.

Students' Societies:

A society composed of both students and professors meets fortnightly to discuss topics of contemporary interest, scientific, literary and historical. The advanced students in the Chemical laboratory conduct a "Journal Club."

Examinations:

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

Monthly Reports:

Regular monthly reports are sent to the parents or guardians of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

For fuller information, the special catalogue issued by the School will be sent upon application to the Director, Prof. George E. Ladd, Rolla, Mo.

DEPARTMENTS OF THE UNIVERSITY.

The University comprises the following departments:

- I—GRADUATE DEPARTMENT.
- II—ACADEMIC DEPARTMENT.
- III—NORMAL DEPARTMENT.
- IV—DEPARTMENT OF LAW.
- V—DEPARTMENT OF MEDICINE.
- VI—DEPARTMENT OF MILITARY SCIENCE AND TACTICS.
- VII—COLLEGE OF AGRICULTURE AND MECHANIC ARTS, embracing
 - A. *School of Agriculture.*
 - B. *Experiment Station.*
 - C. *School of Mechanic Arts.*
 - D. *School of Engineering.*
- VIII—SCHOOL OF MINES AND METALLURGY (at Rolla).

[These departments II to VIII are established and made co-ordinate by the statutes of Missouri.]

I. Graduate Department.

I. ACADEMIC.

Admission:

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for.

Fellowships:

Fellowships are annually established where such additional teaching force is required. Holders of these fellowships are required to teach five or six hours a week, and receive therefor \$200; and they are exempt from the payment of all fees and deposits. For further details, see page 52.

During the year 1898-9, fellowships were held in German, French, Biology, Mathematics, Physiology, Materia Medica, and Bacteriology.

Graduate Club:

A club has been organized by the graduate students for the purpose of furthering their social and scholastic interests in the University and of bringing themselves into touch with graduate student life elsewhere. This club has joined the Federation of Graduate Clubs of the leading American Universities, and the courses here offered are announced in the handbook published by the Federation.

Degrees:

1. *The Master's Degree.*—Application for the Master's Degree in Arts or Science will be considered on the basis of one year's graduate study in the University. This year's study is understood to mean for Fellows at least eight (8) hours a week, for other students at least ten (10) hours a week throughout the scholastic year, or the full equivalent of such study. All courses may be taken from one general subject; at least half must be.

The majority of the courses must be from those offered for graduate students. No course open to undergraduates below the Junior year shall be counted for this degree.

A creditable thesis evincing capacity for original research and power of independent thought, in the line of the student's previous work, shall be submitted on or before May 1 of the given year.

The subject of the thesis and the courses chosen shall be laid before the Committee on Graduate Degrees on or before November 1 of each year.

At the close of the scholastic year the University Council may, on the report of this Committee, recommend to the Board of Curators for this degree such candidates as have satisfactorily fulfilled these conditions.

2. *The Doctor's Degree.*—The candidate will be expected to spend at least three years, or, if he have a Master's Degree, at least two years, in graduate study under University direction; but with the consent of the Faculty, one of these years may in either case be spent *in absentia*.

The candidate must have a Bachelor's degree in Arts, Letters, Science, or Philosophy, from some reputable University or College, and must attain in graduate study at this University a high proficiency in one branch of learning, and a respectable proficiency in at least one other. He must submit a dissertation embodying the results of original investigation, and must pass examinations in his major and minor subjects.

Candidates who have satisfactorily met these conditions may be recommended for the Doctor's degree in the manner prescribed above for candidates for the Master's degree.

***COURSES OF INSTRUCTION.**

ASTRONOMY.

Professor Updegraff:

Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

BIOLOGY (ZOOLOGY).

Professor Ayers, Mr. Jackson:

7. Neurology. A course in the study of vertebrate central nervous system and the terminal sense organs. *Three times a week.* Lectures and laboratory.

10. Cytology. A special study of animal cells with reference to their structure, environment and activities. *Three times a week.*

20. Investigations in Vertebrate Morphology. For 1899-1900 topics will be assigned within the group of cartilaginous fishes. Hours to be arranged with the instructor.

CHEMISTRY.

Professor Brown:

1. History of Chemistry and Chemical Philosophy.
2. Quantitative Analysis (advanced).
3. Organic Chemistry (advanced).
4. Physical Chemistry.

CLASSICAL ARCHAEOLOGY.

Professor Pickard:

1. Topography and Monuments of Athens. *Two hours a week.* Jahn's "Pausaniæ Descriptio Arcis Athenarum," and Schubart's text of Pausanias will be studied and interpreted in the light of most recent excavations and publications. The disputed points of Athenian topography will be discussed, and the attempt will be made, with the aid of plans and photographs, to obtain as clear ideas as possible of both ancient and modern Athens.

2. Archæological Seminary. *Two hours a week.* A study of the description, explanation, and interpretation of works of Greek Art will be made. Both sculpture and vase paintings will be discussed, and important points in the history of Greek Art and Greek artists will be considered.

*Other courses of study offered among the Academic studies (pages 78 ff.) are accepted as graduate in rank. For details, see announcements there.

ENGLISH.

Assistant Professor Penn :

1. Gothic and Old Saxon. *Three hours a week.* An introduction to Germanic philology, with special reference to English. The first semester is given to Gothic, the second to Old Saxon. Grammatical forms, phonology, and morphology of these languages are studied; the accompanying lectures discuss the characteristics of the Germanic dialects—Vowel correspondences, the first and second shiftings of consonants, the ablaut series, and the general laws of language development.

Professor Allen :

2. Beowulf. *Three hours a week.* This course includes: Translation of the poem, with criticism of the text, proposed readings, etc.; study of the grammar of Anglo-Saxon in its relation to precedent and subsequent stages of the language; Anglo-Saxon versification, etc. Questions of mythology, geography, early Germanic life, the genesis of the poem, etc., are assigned for special study.

GEOLOGY.

Assistant Professor Marbut :

1. Geomorphology. Special study of land form—Lectures, library, laboratory and field work. *Three times a week.*

2. Investigator's Course. The mapping and correlation of the small detached areas of coal measure deposits in the vicinity of Columbia.

GERMANIC LANGUAGES.

Professor Hoffman :

1. Middle High German is offered in the first semester. Grammar; reading from Wolfram von Eschenbach: "Gamuhret und Herzelolde." "Parzivals Jugend und Eintritt in's Leben"—translation into good modern High German, noting changes in construction, phraseology, and meaning of words; with lectures on the literature of the period. *Three hours a week.*

1a. Historical German Grammar. *Twice a week.*

2. German Literature of the Eighteenth and Nineteenth Centuries. This course continues through the first and second semesters. *Three hours a week.*

3. Course in Old High German is offered in the second semester: Braune's Grammatik and Lesebuch; reading various fragments, and a portion from Tatian, Otfried, Notker and Williram's Lied; philological study in connection with it. *Three hours a week.*

3a. Germanic Mythology. *Twice a week.*

NOTE.—Either course 1, or 1a, in the first semester, course 3, or 3a, in the second semester, can be given, not both.

GREEK.

Professor Manly :

Seminary for advanced study. Minute study of one play of Euripides with private readings in Aeschylus and Sophocles.

Students desiring to take this work should give previous notice, so that the necessary books may be had for them in time.

POLITICAL ECONOMY.

Professor Hicks :

Seminarium in Economics and Finance. *Two hours a week.*

LATIN.

Professor Jones :

1. History of the Latin Language. *Twice a week both semesters.* This course embraces a historical study of the sounds, inflections and syntax of Latin. It is taught wholly by lectures, but requires much collateral reading.

Assistant Professor Burnam :

2. Latin Palaeography. *Twice a week throughout the year.* This course includes an account of books, their makers and materials in antiquity and the Middle Ages, and abundant practice in reading facsimiles of manuscripts.

MATHEMATICS.

Professor Fellows ; Assistant Professor Defoe :

1. Theory of Functions—first course. This work will consist to a great extent of a course of lectures founded upon Klein's *Funktionentheorie*, supplemented by work in Picard's *Traite d'Analyse*. The subjects will be a detailed treatment of the Complex Variable with its geometrical representation, Cauchy's Theorems, Singular points of Functions, Surfaces of Riemann, study of Algebraic Functions and their Integrals.

2. Theory of Functions—second course.

3. Spherical Harmonics and the Theory of the Potential. The texts used will be Pierce's *Potential Function* and Duhem's *Electricite et Magnetisme*; Byerly's *Spherical Harmonics*. The subjects treated will be Attraction, Theorem of Green, Lemmas of Gauss, Properties of the Potential Surface Integrals, Electrical Distribution and the discussion of the Problem of Dirichlet.

4. Advanced Mechanics.

Numbers 1 and 2 will be given in alternate years.

PHILOSOPHY.

Professor Thilly :

Modern Criticism. A study of the development of the critical problem in modern philosophy from the side of empiricism. Especial attention will be given to Locke's *Essay Concerning Human Understanding*, Berkeley's *Principles of Human Knowledge*, Hume's *Treatise on Human Nature*, and Kant's *Critique of Pure Reason*. This course is open only to such students as have completed courses in Psychology, Logic, Ethics, and the History of Philosophy, and possess a good reading knowledge of Latin, French, and German. *Three times a week for two semesters.*

PHYSICS.

Professor Lipscomb :

Laboratory. Advanced Measurements and Special Investigations. Open only to those who have had Undergraduate Courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work. *Three to five times a week.* See announcement of Academic Department, under Physics.

ROMANCE LANGUAGES.

Professor Weeks :

1. Old French. Paris and Langlois' *Ohrestomathie*, with lectures. *M. F., at 10:30.* This course is open to Graduates properly qualified, and to any Senior who has made a specialty of Romance Languages to the extent of having completed with high credit Undergraduate Courses 1, 2, 3 and 4 (see Academic Department, "Romance Languages"). The epic poem, *Aliscans*, will be read, with close attention to the elements that enter into the poem, the object being to present to the student a practical illustration of text criticism. The course is conducted entirely in French.

2. Phonetics. A General Introduction to Philology. *Second semester, W. F., at 4.* This course is one of general interest to students of Philology. The work consists of two parts: historical and practical. The practical work includes an effort to get at the production of speech-sounds from the physiological standpoint. Such works as Grandgent's *English and German Sounds* (Ginn & Co.) are used. Numerous tracings showing the actions of the organs of speech are discussed. The University has established a Laboratory of Experimental Phonetics for the more accurate study of the living speech.

II. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

SCHOOL OF AGRICULTURE.

For the degree of M. Agr., graduates of the College with the degree B. Agr. are required to take the two years' graduate course described

In the announcement of this School. See Index, "College of Agriculture." The details of this course are arranged to suit the previous training of the candidates.

SCHOOL OF ENGINEERING.

Graduate work in Civil, Electrical, and Mechanical Engineering is offered at Columbia to those who have finished the undergraduate courses in these subjects with the degree of Bachelor of Science. Students that entering under these conditions have completed a year of graduate work and passed satisfactory examinations thereon, and presented a thesis of real merit, will receive, according to the course in which they have studied, the degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), or Mechanical Engineer (M. E.).

See announcement of this School.

III. LAW.

One year of advanced work leading to the degree of LL. M.

The course is open to graduates of the Law department and of other law schools who have completed an equivalent course of study.

The object of the course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures, recitations and independent investigation on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence.

The student is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students such instruction.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Lewin on Trusts; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland and Pollock on Theory of Jurisprudence.

See announcement of the Law Department.

II. Academic Department.

FACULTY.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediaeval History.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

MILTON UPDEGRAFF, M. S., B. C. E.,

*Professor of Astronomy, Assistant Professor of Mathematics, and
Director of the Observatory.*

JOHN MILLER BURNAM, Ph. D.,

Assistant Professor of Latin Language and Literature.

JOHN WALDO CONNAWAY, M. D. C., M. D.,

Professor of Physiology (Human and Comparative).

FREDERICK CHARLES HICKS, B. A., Ph. D.,

Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,

*Professor of Classical Archaeology, Assistant Professor of Greek.
Curator of the Museum of Classical Archaeology, and Dean of
the Department.*

FRANK THILLY, B. A., Ph. D.,

Professor of Philosophy.

LUTHER MARION DEFOE, A. B.,

Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,

Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,

Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,

Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,

Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M., Ph. D.,

Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,

Professor of Elocution.

CURTIS FLETCHER MARBUT, B. S., A. M.,

Assistant Professor (in charge) of Geology and Mineralogy, and Acting Curator of the Geological Museum.

JOHN NELSON FELLOWS, A. M.,

Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CHARLES THOM, A. B., A. M.,

Instructor in Biology.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

FELLOWS.*

HENRY HERRENLEBEN, B. L.,

Fellow in Germanic Languages.

JOHN LAWRENCE GERIG, A. B.,

Fellow in Romance Languages.

ROYALL HILL SWITZLER, A. B.,

Fellow in Mathematics.

CLARENCE MARTIN JACKSON, B. S.,

Fellow in Biology.

* Fellows are elected for one year and are required to teach five or six hours a week.

Academic Courses.

In the Academic department there are five courses of study, one leading to the degree of Bachelor of Arts (A. B.), one to the degree of Bachelor of Letters (B. L.), and three to the degree of Bachelor of Science (B. S.). In the A. B. course prominence is given to the Classical Languages; in the B. L. course, to Modern Languages (including English), History, and Political Economy; and in the B. S. courses, to Mathematics and the Sciences. On reaching the Junior year (Sophomore year in B. S.

courses), the candidate for a degree in any course chooses, in addition to the prescribed work, such work as he may prefer.

Taking as the unit one hour a week for one semester, the electives in the A. B. course amount to 40 hours, in the B. L. course to 38 hours, and in the B. S. courses to 62 hours.

The student may apply his electives to any Academic elective course for which he is prepared, or to any regular Academic study not required in the course that he is pursuing, or to any of the following courses offered in other departments:

From the Normal Department: Pedagogy, for not more than three hours a week for two semesters.

From the School of Agriculture: Entomology, for not more than three hours a week for two semesters.

From the Medical Department: Anatomy from the First Year, or Physiology from the Second Year, or Bacteriology from the Third Year, for not more than six hours a week for two semesters.

From the School of Engineering: Thermodynamics, for not more than three hours a week for one semester; Descriptive Geometry, Electrical Measurements, each for not more than three hours a week for one semester; Applied Mechanics, for not more than six hours a week for one semester; Astronomy, for not more than three hours a week for one semester; and Mathematical Theory of Stresses, for not more than three hours a week for one semester.

The maximum time, however, given to courses in other departments must not exceed the equivalent of twelve hours for one semester.

Academic students may elect Physical Culture three hours a week for four semesters, and receive a credit toward the Academic degree of one hour's work for each semester.

The student may give all his electives to one study, or divide the time as he may deem proper among the eligible studies.

When the student has elected a subject that he has not studied before, he must pursue it for at least two semesters unless the subject is completed in less time. Electives are open only to Juniors, Seniors, Sophomores in the A. B. and B. S. courses, and Graduates. Juniors and Seniors who have Freshman or Sophomore work to make up must, in making out their cards, give such work precedence over elective work. A student who is behind his class in one or two subjects, or has failed to pass in any subject, may make up in the summer school work not exceeding, in any one summer, the equivalent of twelve (12) hours for one semester of lecture room or laboratory work (see Appendix).

Students may not change from one course to another in a session without permission of the Faculty.

SCHEME OF STUDIES.

A. B.	B. L.
<i>Freshman, First Semester.</i>	<i>Freshman, First Semester.</i>
8:30. Comp. & Rhet., T. Th. S. 3 9:30. Latin, M. W. F. 3 10:30. Greek, M. T.W.Th. F. S. 6 *Science 3 11:30. Plane Trig. & Sol. Geom. T. Th. S. 3	8:30. Comp. & Rhet., M.W. F. 3 8:30. Ger. or French, T. Th. S. 3 9:30. Latin, M. W. F. 3 or 10:30. Greek, M. W. F. 3 *Science 3 10:30. Gen. History, T. Th. S. 3 11:30. Plane Trig. & Sol. Geom., T. Th. S. 3
<i>Freshman, Second Semester.</i>	<i>Freshman, Second Semester.</i>
8:30. Comp. & Rhet., T. Th. S. 3 9:30. Latin, M.T.W.Th. F. S. 6 10:30. Greek, M. W. F. 3 *Science 3 11:30. Spher. Trig. & Anal. Geom., T. Th. S. 3	8:30. Comp. & Rhet., M.W. F. 3 8:30. Ger. or French, T. Th. S. 3 9:30. Latin, M. W. F. 3 or 10:30. Greek, M. W. F. 3 *Science 3 10:30. Gen. History, T. Th. S. 3 11:30. Spher. Trig. & Anal. Geom., T. Th. S. 3
<i>Sophomore, First Semester.</i>	<i>Sophomore, First Semester.</i>
8:30. Anal. Geom. or *Science, T. Th. S. 3 9:30. Greek, M. W. F. 3 10:30. Ger. or French, M.W. F. 3 10:30. Eng. Lit., T. Th. S. 3 11:30. Latin, M. T.W. Th. F. S. 6	8:30. English Hist., T. Th. S. 3 8:30. Anal. Geom. or *Science, T. Th. S. 3 9:30. Ger. or French, M. W. F. 3 10:30. Eng. Lit., T. Th. S. 3 11:30. Latin or Greek, M.W. F. 3 3:00. Theory of Economics and Finance, M. W. F. 3
<i>Sophomore, Second Semester.</i>	<i>Sophomore, Second Semester.</i>
8:30. Ger. or French or Physiol- ogy, M. W. F. 3 9:30. Greek, M.T.W.Th. F. S. 6 10:30. Eng. Lit., T. Th. S. 3 11:30. Latin, T. Th. S. 3 Elective 2	8:30. Amer. Hist., T. Th. S. 3 9:30. Ger. or French, T. Th. S. 3 10:30. Eng. Lit., T. Th. S. 3 11:30. Latin or Greek, M. T. W. Th. F. S. 6 3:00. Theory of Economics and Finance, M. W. F. 3
<i>Junior, First Semester.</i>	<i>Junior, First Semester.</i>
8:30. Greek, T. Th. S. 3 9:30. Psychology, M. W. F. 3 10:30. German, M. W. F. 3 10:30. French, T. Th. S. 3 Elective 4	9:30. Psychology, M. W. F. 3 10:30. French or Ger., T. Th. S. 3 11:30. Eng. Lang., T. Th. S. 3 3:00. Economic Hist., T. Th. S. 3 Elective 4
<i>Junior, Second Semester.</i>	<i>Junior, Second Semester.</i>
8:30. Greek, T. Th. S. 3 9:30. Logic, M. W. F. 3 10:30. German, M. W. F. 3 10:30. French, T. Th. S. 3 Elective 4	9:30. Logic, M. W. F. 3 10:30. French or Ger., T. Th. S. 3 11:30. Economic Hist., M. W. F. 3 11:30. Eng. Lang., T. Th. S. 3 Elective 4
<i>Senior, First Semester.</i>	<i>Senior, First Semester.</i>
Elective 15	Elective 15
<i>Senior, Second Semester.</i>	<i>Senior, Second Semester.</i>
Elective 15	Elective 15

1. MATHEMATICAL—PHYSICAL.

Freshman, First Semester.

8:30.	Comp. & Rhet., T. Th. S.	3
8:30.	Ger. or French, M. W. F.	3
9:30.	Algebra, M. W. F.	3
10:30.	Physics, T. S.	2
11:30.	Chemistry, M. or W.	1
11:30.	Plane Trig. & Sol. Geom., T. Th. S.	3
1:30.	Physical Laboratory, Th.	1
1:30.	Chemical Laboratory	2

Freshman, Second Semester.

8:30.	Comp. & Rhet., T. Th. S.	3
8:30.	Ger. or French, M. W. F.	3
9:30.	Algebra, M. W. F.	3
10:30.	Physics, T. S.	2
11:30.	Chemistry, M. or W.	1
11:30.	Spher. Trig. & Anal. Geom., T. Th. S.	3
1:30.	Physical Laboratory, Th.	1
1:30.	Chemical Laboratory	2

Sophomore, First Semester.

8:30.	Th. S.	3
9:30.	M. W. F.	3
10:30.		2
11:30.	M. W. F.	3
1:30.	tory, W.	1
		6

2. LATIN—SCIENCE.

Freshman, First Semester.

8:30.	Comp. & Rhet., T. Th. S.	3
8:30.	Ger. or French, M. W. F.	3
10:30.	General Biology of Animals and Plants, T.	1
10:30.	Latin or Greek, M. W. F.	3
11:30.	Chemistry, M. or W.	1
11:30.	Plane Trig. & Sol. Geom., T. Th. S.	3
1:30.	Biological Laboratory, Th. S.	2
1:30.	Chemical Laboratory	2

Freshman, Second Semester.

8:30.	Comp. & Rhet., T. Th. S.	3
8:30.	Ger. or French, M. W. F.	3
10:30.	General Biology of Animals and Plants, T.	1
10:30.	Latin or Greek, M. W. F.	3
11:30.	Chemistry, M. or W.	1
11:30.	Spher. Trig. & Anal. Geom., T. Th. S.	2
1:30.	Biological Laboratory, Th. S.	2
1:30.	Chemical Laboratory	2

Sophomore, First Semester.

8:30.	Th. S.	3
9:30.	W. F.	3
10:30.	M. W. F.	3
10:30.		2
1:30.	Th.	1
	Elective	6

3. NATURAL HISTORY.

Freshman, First Semester.

8:30.	S.	3
8:30.	F.	3
10:30.	W. F.	3
10:30.	nals	1
11:30.		1
11:30.	T. Th. S.	3
11:30.	Th. S.	2
1:30.		2

Freshman, Second Semester.

8:30.	Comp. & Rhet., T. Th. S.	3
8:30.	Ger. or French, M. W. F.	3
10:30.	Physlog	3
10:30.	General	1
11:30.	Chemistry, M. or W.	1
11:30.	Spher. Trig. & Anal. Geom., T. Th. S.	3
1:30.	Biological Laboratory, Th. S.	2
1:30.	Chemical Laboratory	2

Sophomore, First Semester.

8:30.	Anatomy of Vertebrates, T. Th. S.	3
8:30.	Histology of Vertebrates, M. W. F.	3
9:30.	German or French, M. W. F.	3
10:30.	Physics, T. S.	2
1:30.	Physical Laboratory, Th.	1
	Elective	6

Sophomore, Second Semester.		Sophomore, Second Semester.		Sophomore, Second Semester.	
8:30. Calculus, T. Th. S.	3	8:30. Latin or Greek, T. Th. S.	3	8:30. Anat. of Vertebrates T. Th. S.	3
9:30. Ger. or French, T. Th. S.	3	9:30. Ger. or French, T. Th. S.	3	8:30. Animal Physiology, M. W. F.	3
10:30. Physics, W.	1	10:30. Physiographic Geol., M. W. F.	3	9:30. German or French, M. W. F.	3
11:30. Gen. Astronomy, M. W. F.	3	10:30. Physics, T. S.	2	10:30. Physics, T. S.	2
1:30. Physical Laboratory, M. W. F.	2	1:30. Physical Laboratory, Th.	1	1:30. Physical Laboratory, Th.	1
Elective	6	Elective	6	Elective	6
Junior, First Semester.		Junior, First Semester.		Junior, First Semester.	
9:30. Psychology, M. W. F.	3	9:30. Psychology, M. W. F.	3	9:30. Psychology, M. W. F.	3
10:30. Physiographic Geol., M. W. F.	3	11:30. Gen. Astronomy, M. W. F.	3	11:30. Gen. Astronomy, M. W. F.	3
Elective	10	Elective	10	Elective	10
Junior, Second Semester.		Junior, Second Semester.		Junior, Second Semester.	
9:30. Logic, M. W. F.	3	9:30. Logic, M. W. F.	3	9:30. Logic, M. W. F.	3
10:30. Physiographic Geol., M. W. F.	3	11:30. Gen. Astronomy, M. W. F.	3	11:30. Gen. Astronomy, M. W. F.	3
Elective	10	Elective	10	Elective	10
Senior, First Semester.		Senior, First Semester.		Senior, First Semester.	
Elective	15	Elective	15	Elective	15
Senior, Second Semester.		Senior, Second Semester.		Senior, Second Semester.	
Elective	15	Elective	15	Elective	15

*Notes on the Scheme of Studies—1. Students in the A. B. and B. L. courses may elect in their Freshman year, three hours a week of any one of the following Sciences for which they are prepared: Physics, Chemistry, Geology, Mineralogy, Biology.

2. Students in the A. B. and B. L. courses may substitute for Analytical Chemistry a week of Astronomical or of any one of the Sciences.

3. Students in the A. B. and B. L. courses that wish to continue the study more year may do so with the consent of the Faculty, by temporarily omitting some required study.

4. In any course the time required for French and German may be divided by the student at his pleasure, provided he do not give to either of these languages less than two semesters.

5. Military Science and Tactics may be taken in addition to 18 hours a week of other subjects.

6. The figure after each study indicates the number of recitations or lectures or laboratory exercises each week.

7. Without the consent of the Faculty, students are not allowed to take work in more than five subjects, unless the course is such as to require it. The subjects intended are such as English, Latin, French, Philosophy, Chemistry, etc.

ACADEMIC STUDIES.

English.

Professor ALLEN; Assistant Professors PENN and BELDEN.

1. English Composition and Rhetoric. Detailed study and practice (1) in the structure of the Paragraph, and (2) in the Kinds of Composition. Lectures. Text-book, exercises, and themes. Scott & Denney's Paragraph-Writing, and A. S. Hill's Principles of Rhetoric. Class-room studies of masterpieces of English Literature (with collateral readings) to illustrate the different kinds of literary composition. Sections I and II, *T. Th. S.*, at 8:30; Sections III and IV, *M. W. F.*, at 8:30; Section V, *M. W. F.*, at 10:30. Assistant Professors PENN and BELDEN.

(Freshman.)

2. English Literature. *First Semester*, Chaucer to Milton; *Second*, Restoration to the present. Lectures. Parallel readings, and reports; essays on literary and historical subjects. *T. Th. S.*, at 10:30. Professor ALLEN and Assistant Professor BELDEN.

(Sophomore.)

3. English Literature. Nineteenth Century. *First Semester*, 1789-1830; *Second*, 1830-1890. Lectures. Readings, class-room study of texts, and occasional essays. *T. Th. S.*, at 10:30. Assistant Professor PENN.

(Sophomore.)

Open also as a Junior Elective.

4. English Literature. Eighteenth Century; from the Restoration to the French Revolution. *First semester*, Dryden and Pope; *Second*, Swift, and the Novelists. Lectures. Readings, and reports. *W. F.*, at 3. Assistant Professor BELDEN.

(Senior Elective.)

- 5a. History of the English Language. Lectures and text-book. *First semester*, *T. Th. S.*, at 11:30. Professor ALLEN.

(Junior.)

- 5b. Study of Modern Prose Style, based upon masterpieces of representative authors. Essays, and reports. *Second semester*, *T. Th. S.*, at 11:30. Professor ALLEN.

(Junior.)

6. English Literature. Shakspeare. Eight to ten selected plays; class-room reading and interpretation; detailed study of style. *T. Th. S.*, at 3. Assistant Professor PENN.

(Junior Elective.)

14. English Literature. The English Drama. *First semester*: Chief Plays of Shakspeare, in approximate chronological order. A study of the development of Shakspeare's art and genius. *Second semester*: The English Drama (exclusive of Shakspeare), from its beginnings to the Restoration (1250-1660). Lectures. Selected plays, and reports; occasional essays. Open only to those that have taken course 6 or an equivalent. *W. F., at 10:30.* Assistant Professor PENN. (Senior Elective.)
16. English Literature. Tennyson and Browning. Readings, class-room study and interpretation of texts, and occasional papers by members of the class. Open only to those that have had English 8 or an equivalent. *W. F., at 10:30.* Assistant Professor PENN. (Senior Elective.)

Courses 14 and 16 are to be given in alternate years.

- 15a. American Literature. Lectures. Selected readings, and reports. *First semester, T. Th. S., at 3.* Assistant Professor BELDEN. (Junior Elective.)
7. Anglo-Saxon. Prose and Poetry. *M. W. F., at 11:30.* Professor ALLEN. (Senior Elective.)
8. Studies in Anglo-Saxon, based on Beowulf and the Wuelker-Grein Bibliothek. *T. Th. S., at 3.* Professor ALLEN. (Graduate Elective.)

Course 7 or equivalent is required for admission to Course 8.

- 9b. Higher Composition, expository and argumentative. *Second semester, T. Th. S., at 3.* Assistant Professor BELDEN. (Junior Elective.)
10. Middle English. *W. F., at 8:30.* Professor ALLEN. (Senior Elective.)
11. Gothic. Introduction to Germanic Philology, with special reference to English. Wulfila. Lectures. *M. W. F., at 3.* Assistant Professor PENN. (Graduate Elective.)
The second half of the year may be given to Old Saxon (Holland).
- 12a. The French Element in English. (Knowledge of Latin and French necessary.) *First semester, W. F., at 9:30.* Professor ALLEN. (Senior Elective.)
- 12b. Principles of English Etymology. *Second semester, W. F., at 9:30.* Professor ALLEN. (Senior Elective.)
- 13b Teachers' Course. *Second semester.* Professor ALLEN.

Required for B. L., courses 1, 2 (or 3), 5a, and 5b; for A. B., courses 1 and 2 (or 3); for B. S. and Engineering, course 1.

Of the elective work, course 6 is open to Seniors also; courses 14 and 10 are open to Juniors, and courses 8, 11 are primarily for graduates.

A special medal, known as the "McAnally Medal," is offered for the best essay, thesis, or poem by members of the Senior class, competing under certain rules laid down by the founder of the prize. Subject for 1900, "Rudyard Kipling."

Latin.

Professor JONES; Assistant Professor BURNAM.

The following courses are offered:

1. Cicero and Ovid. *M. W. F., at 10:30.* Select Orations of Cicero. Selections from the Metamorphoses. Grammar and Composition. This course is required of students in the Latin-Science course and may be taken as an elective by those students in the other science courses, who presented for entrance two years of Latin, instead of two years of German or two years of French. It is not open to students in the A. B. or B. L. Course. Assistant Professor BURNAM. (Freshman, Latin-Science.)
Text-books: Kelsey's Cicero; Allen and Greenough's Latin Grammar.
2. Sallust and Vergil, with sight reading. *M. W. F., at 9:30.* Professor JONES, Assistant Professor BURNAM. (Freshman, B. L.)
3. Sallust and Vergil, with sight reading. *First semester, M. W. F., at 9:30; second semester M. T. W. Th. F. S., at 9:30.* Professor JONES and Assistant Professor BURNAM. (Freshman, A. B.)
Text-books: Herberman's Catiline; Greenough and Kittredge's Vergil; Latin Composition; Allen and Greenough's Latin Grammar; Guerber's Myths of Greece and Rome.
4. Cicero and Vergil. Cicero, de Senectute, Vergil's Aeneid. *T. Th. S., 8:30.* Assistant Professor BURNAM. (Sophomore, Latin-Science.)
Text-books: Bennett's Cicero; Greenough and Kittredge's Vergil; Allen and Greenough's Latin Grammar.
5. Horace and Livy. *First semester, M. W. F., at 11:30; second semester, M. T. W. Th. F. S., at 11:30.* Professor JONES.
(Sophomore, B. L.)
6. Horace and Livy. *First semester, M. T. W. Th. F. S., at 11:30; second semester, T. Th. S., at 11:30.* Assistant Professor BURNAM.
(Sophomore, A. B.)
Text-books: Shorey and Kirkland's Horace; Lord's Livy; Grammar and Composition.
7. (a) Cicero and Pliny, selected letters. (b) Juvenal and Martial. *M. W. F., at 3.* Professor JONES. (Elective.)
8. Sight reading. *T. Th. at 3.* Professor JONES. (Elective.)

Academic Studies

81

9. Terence and Plautus. *M. W. F., at 10:30.* Professor JONES.
(Elective.)
10. Latin Poetry. *T. Th., at 10:30.* Assistant Professor BURNAM.
(Elective.)
11. History of the Latin Language. Sounds, inflections, syntax. *W. F., at 8:30.* Professor JONES. (Graduate Elective.)
12. Latin Paleography. Books, the makers and materials, in Antiquity and the Middle Ages; abundant practice in reading facsimiles of manuscripts. *M. W., at 3.* Assistant Professor BURNAM.
(Graduate Elective.)

Courses 1 and 4 are required for the B. S. degree in the Latin-Science Course; courses 2 and 5 are required for the B. L. degree, and courses 3 and 6 for the A. B. degree. All other courses are elective. The Roman method of pronunciation only is permitted.

Greek.

Professor MANLY; Assistant Professor PICKARD.

1. Xenophon's Anabasis. *First semester, M. T. W. Th. F. S., at 10:30.*
Second semester, M. W. F., at 10:30. (Freshman.)
- 2a. Homer's Odyssey, I—IV. *First semester, M. W. F., at 9:30.*
(Sophomore.)
- 3b. Xenophon's Memorabilia, I—II; Plato's Apology and Crito. *Second semester, M. T. W. Th., at 9:30.* (Sophomore.)
- 4b. Greek Prose Composition. *Second semester, F. S., at 9:30.*
(Sophomore.)
- 5a. Greek Tragedy. Aeschylus' Prometheus Bound; Sophocles' Antigone; Euripides' Hippolytus. *First semester, T. Th. S., at 8:30.*
(Junior.)
- 6b. Demosthenes' Olynthiacs, Philippics and Selections. *Second semester, T. Th. S., at 8:30.* (Junior.)
- 7a. Lectures on the Greeks of the Homeric Period. *First semester, T. Th., at 9:30.* (Elective.)
- 8a. Greek Theater. *First semester, T., at 10:30.* (Elective.)
9. History of Greece. *Two hours a week.* (Elective.)
10. Greek Life. Manners and Customs of the Ancient Greeks. Assigned readings, and reports. Lectures illustrated by maps, charts, photographs and stereopticon views. *W. F., at 2.*
(Elective.)
11. Greek Syntax. *One hour a week.* (Elective.)
- 12a. New Testament Greek. *First semester, Th. S., at 3.* (Elective.)

13. Greek for students of Science and others who may elect it. *M. W. F., at 8:30.* (Elective.)
14. Homer's *Iliad* and *Odyssey*. Rapid reading, and papers on Homeric Antiquities. *Two hours a week.* (Elective.)
15. The Plays of Sophocles. *Two hours a week.* (Elective.)

Classical Archaeology.

Professor PICKARD.

The following courses are offered :

1. History of Greek Art. An introductory study of Assyrian and of Egyptian Art, followed by a special study of the development of Greek Architecture and Sculpture from the VII Century B. C., to the I Century A. D. *T. Th. S., at 3.*
2. "Homeric Art" or Art of Primitive Greece. Lectures based on the latest excavations and publications. *First semester, one hour a week.*
3. Introductory Study of Greek Vases and Vase Paintings; based on Rayet and Collignon's "*La Ceramique Grecque.*" *Second semester, one hour a week.*
4. Etruscan and Graeco-Roman Art. *Two hours a week.*
 Study of Etruscan Art is based on Martha, "*L'Art Etrusque.*"
 Study of Graeco-Roman Art is carried down to Byzantine times.
5. Topography and Monuments of Athens, based on a careful study of Pausanias. *Two hours a week.*
6. Roman Life. *One semester, two hours a week.* A special study of the extant remains, particularly in Rome and Pompeii. No knowledge of Latin required.
7. Archaeological Seminary. Interpretation of monuments and discussion of disputed points in the history of Greek art and Greek artists.
8. History of Renaissance Painting. *First semester, Painting of the Netherlands and of Germany; Second semester, Italian Painting. M. W. F., at 3.*
9. History of Modern Painting. *Two hours a week.*
10. History of Architecture. *Three hours a week.*

All courses are elective. Course 5 alone requires a knowledge of Greek. Courses 5 and 7 are primarily Graduate electives.

Museum of Classical Archaeology :

An excellent beginning has been made in equipping a laboratory for the study of Classical Archaeology. For this purpose the third floor of the west wing of Academic Hall, a room 110x36 feet, is fitted up. It is now supplied with models of temples, illustrating the three orders of Greek Architecture, and with fifty plaster casts of the most famous specimens of Greek and Roman Art. These are arranged chronologically, and with them are hung one hundred and fifty framed photographs of other works of classic art. Besides these, the Museum possesses about a thousand photographs, and a fine collection of lantern slides.

Romance Languages.

Professor WEEKS ; Mr. GERIG.

FRENCH.

1. Elementary course. French Prose and Composition. Grandgent's French Grammar, Rollin's Reader. Section I, *T. Th. S.*, at 8:30; Section II, *M. W. F.*, at 8:30. Professor WEEKS and Mr. GERIG.
2. Modern Fiction and Plays. Composition, sight reading. *M. W. F.*, at 9:30. Professor WEEKS.

This course is meant for the second year's study in French. Much ground will be covered, and especial attention paid to pronunciation. Several of the books read are here mentioned: Some one of Erckmann-Chatrian's better stories; some of Daudet's short stories; de Musset's *Pierre et Camille*; Me. Greville's *Dosia*, de Vigny's *Le Cachet Rouge*; Sandeau's *Mademoiselle de la Seigliere*; Augier, *Le Fils de Giboyer*; Lamartine's *Jeanne d' Arc*.

3. A course parallel to the second year's work under (2) is given, intended especially for training in conversation and composition. Besides some of the texts mentioned in (2) many short stories are read with reports and discussions in French. *M. W. F.*, at 10:30. Mr. GERIG.
4. General View of French Literature. Rapid Reading. *T. Th. S.*, at 9:30. Professor WEEKS and Mr. GERIG. (Junior Elective.)

This course is meant for the third year's study. A great deal of ground is covered; much pronouncing is done, very little translation. The course is conducted entirely in French. Students

do outside reading, and hand in written work in French. The first semester is devoted to the 17th and 18th centuries. One or more plays of the great classical dramatists are read, together with several orations of Bossuet. In the 18th century two of Voltaire's plays and one of Beaumarchais' are read. The second semester is devoted to the 19th century. A story and a play by Hugo are read, and among other things the following works: de Vigny's *Cinq Mars*; Merimee's *Colomba*; About's *Le Roi des Montagnes*; de Bornier's *La Fille de Roland*; de Banville's *Gringoire*; Labiche's *Moi* (Allyn & Bacon's edition); Coppee's *On Rend l'Argent*, and his *Le Pater* (Holt & Co.); a volume of de Musset's Poems and two of his Proverbs.

5. The Classic Period of French Literature. *T. Th.*, at 10:30. Prof. WEEKS. (Senior Elective.)

During the first semester Pascal's *Lettres Provinciales* will be read, with lectures on Jansenism. An ability to understand spoken French is a requisite for this course. During the remainder of the year, some subject desired by the students may be taken up. Last year the beginnings of French lyric poetry were read in this way.

6. Old French. Paris and Langlois' *Chrestomathie*, *Le Coronement Loays*, *Le Covenant Vivien*, and a large part of *Aliscans* (edition of Guessard) will be read. The course is conducted entirely in French. *M. F.*, at 10:30. Professor WEEKS.

(Graduate Elective.)

This course is meant for Graduates. Occasionally a Senior who has taken with high credit the preceding work and who is making a specialty of Romance Languages, is allowed to elect this course, which can be pursued advantageously for two successive years.

ITALIAN.

1. Beginning Course. *T. Th. S.*, at 11:30. Professor WEEKS. (Junior Elective.)

This course for the present can be given only in alternate years. No composition work is done. Grandgent's Italian Grammar is used. As soon as possible students begin to pronounce aloud without translating.

SPANISH.

1. Beginning Course. *T. Th. S., at 10:30.* Mr. GEBIG.
(Junior Elective.)
This course is parallel to the one in Italian, and the same methods are employed. Edgren's Grammar and Ramsay's Reader are used.

PHONETICS.

- 1b. General Introduction to Philology. *Second semester, W. F., at 4.*
Professor WEEKS. (Graduate Elective.)
An effort is made in this course to study the phenomena of speech sounds from a physiological standpoint. The University has established a laboratory of Experimental Phonetics for the more accurate study of the living speech.

Germanic Languages.

Professor HOFFMAN; Mr. HERRENLEBEN; Miss KAHN.

The following courses are offered:

1. German. Section I, *T. Th. S., at 8:30*; Section II, *M. W. F., at 10:30.*
Section III, *M. W. F., at 8:30.*
Professor HOFFMAN; Mr. HERRENLEBEN; Miss KAHN.
(Freshman.)
Text-books: Thomas' Practical Grammar, Van'Daell's Reader, Storm's Immensee, Gerstaecker's Germelshausen, Schiller's Der Neffe als Onkel.
2. German. Section I, *M. W. F., at 9:30*; Section II, *M. W. F., at 10:30.*
Professor HOFFMAN and Mr. HERRENLEBEN. (Sophomore.)
Text-books: Doktor Wespe by Benedix, Heine's Harzreise, Schiller's Wilhelm Tell, Harris's Prose Composition, Syntax.
3. Life and Works of Schiller. Composition. *T. Th. S., at 10:30.* Professor HOFFMAN. . . (Junior.)
4. Goethe and Lessing. German Essays. *T. Th. S., at 11:30.* Professor HOFFMAN. (Elective.)
5. Conversational German. *T. Th. S., at 9:30.* Professor HOFFMAN. (Elective.)
- 6a. Middle High German. *First semester, M. W. F., at 11:30.* Professor HOFFMAN. (Graduate Elective.)
Paul's Mittelhochdeutsche Grammatik · Wolfram von Eschenbach. Lectures on the Literature of the M. H. German Period.

- 6b. Old High German. *Second semester, M. W. F., at 3.* Professor
HOFFMAN. (Graduate Elective.)

Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*.

- 6c. Historical German Grammar. *T. and S., at 3.* Professor HOFFMAN.
(Graduate Elective.)

- 6d. Germanic Mythology. *T. and S., at 3.* Professor HOFFMAN.
(Graduate Elective.)

7. German Literature of the XVIII and XIX Centuries. *T. Th. S., at
2.* Professor HOFFMAN. (Graduate Elective.)

Courses 1, 2, 3 are required studies. Course 4 is open also to Seniors.

Course 1 is a Freshman study for B. L. and B. S. students, but Sophomore for A. B. students. Course 2 is a Sophomore study for B. L. and B. S. students, but Junior for A. B. students.

NOTE.—Of the courses 6a, 6b, 6c, 6d, and 7, not more than two can be given during any one semester.

History.

Professor HICKS; Assistant Professor LOEB.

The following courses are offered:

1. General History. A course in the General History of Europe, presupposing such elementary knowledge as may be obtained from the study of Myers' General History or its equivalent. *T. Th. S., at 10:30.* One or more additional sections will be formed.
(Freshman.)
2. English and American History. *First semester.* The Political History of England. Special attention will be given to the growth of political institutions. *Second semester.* American History. A general survey of American History from the Period of Colonization to the Present. *T. Th. S., at 8:30.* An additional section will be formed.
(Sophomore.)
3. Theory of Politics and Jurisprudence. *First semester.* Theory of Politics. An historical and critical study of the theories of the nature and origin of the State and an analysis of rights and sovereignty. *Second semester.* Theory of Jurisprudence. This course treats of the nature, sources and classification of law and includes a consideration of the general principles of private law. *M. W. F., at 11:30.*
(Elective.)

4. **Comparative Constitutional Law.** A comparative study of the constitutional law of the principal states of Europe and America. The course includes a consideration of the formation of the principal constitutions. *T. Th. S., at 11:30.* (Elective.)
5. **History and Science of Administration.** A study of the nature and function of the administration and its relation to the legislative and judicial departments. Governmental structure will be studied in detail and local government will be considered with reference to recent developments. *M. W. F., at 3.* (Elective.)
 Required: For B. L., courses 1, 2.
 Elective: All courses are elective.
 Undergraduate and Graduate: Courses 3, 4.
 Graduate: Course 5.

Political Economy.

Professor HICKS.

The following courses are offered:

1. **Theory of Economics and of Finance.** A course in the fundamental principles of economics and of finance. The subjects are first covered by lectures, after which a comparative study is made of the views of representative authors. *M. W. F., at 3.* (Sophomore.)
2. **Economic History.** A study of the industrial development of England, the United States and Missouri, with special reference to the economic problems of society. *T. Th. S., at 3.* (Junior.)
3. **Economic Problems.** A critical study of some of the leading economic problems: Socialism, Problems of Labor, Money, Transportation and the Tariff. *M. W. F., at 2.* (Elective.)
4. **Financial Systems.** An historical study of the general development of financial systems, including a detailed investigation of the history of public finance in the United States and Missouri, followed by a comparative study of the revenue systems of the leading nations and of some of the American commonwealths. *T. Th. S., at 2.* (Elective.)
5. **Seminar.** An opportunity is here given for the advanced study of questions of economics and finance. (Elective.)
 Required: For B. L., courses 1, 2.
 Elective: All courses are elective.
 Undergraduate and Graduate: Courses 3, 4.
 Graduate: Course 5.

Philosophy.

Professor THILLY.

The following courses are offered :

1. Psychology and Logic. Sections I and II, *M. W. F.*, at 8:30 and 9:30;
Section III, *T. Th. S.*, at 9:30. (Junior.)
Required for A. B., B. L., and B. S. degrees. Text-books :
James's Psychology, Briefer course, Creighton's Introductory Logic.
2. Advanced Psychology. *M. W. F.*, at 10:30. (Elective.)
Course 2 must be preceded by course 1. Text-books : Ladd's
Psychology, Descriptive and Explanatory ; James's Psychology.
Advanced Course ; Sully's The Human Mind.
3. Ethics. *Th. S.*, at 2. Text-book : Paulsen's System of Ethics.
(Elective.)
4. History of Philosophy. *T. Th. S.*, at 10:30. Text-book : Weber's
History of Philosophy. (Elective.)
5. Metaphysics. *W. F.*, at 2. Text-book : Paulsen's Introduction to
Philosophy. (Elective.)
6. Modern Pessimism. *W. F.*, at 11:30. Text-books : Schopenhauer's
World as Will and Idea ; Hartmann's Philosophy of the Uncon-
scious. (Elective.)

Mathematics.

Professor FELLOWS ; Assistant Professor DEFOE and Assistant Professor
UPDEGRAFF.

- 1a. Trigonometry and Solid Geometry. *First semester, T. Th. S.*, at
11:30. Professor FELLOWS and Assistant Professor DEFOE.
(Freshman.)
Texts : Crawley's Trigonometry, Phillips and Fisher's Geometry.
- 1b. Analytic Geometry. *Second semester, T. Th. S.*, at 11:30. Professor
FELLOWS, and Assistant Professor DEFOE. (Freshman.)
Text : Tanner and Allen's Analytic Geometry.
2. Advanced Algebra. *M. W. F.*, at 9:30. Assistant Professor DEFOE.
Text : Hall and Knight's Higher Algebra. (Freshman.)
3. Analytic Geometry and Calculus. *T. Th. S.*, at 8:30. Assistant Pro-
fessor DEFOE. (Sophomore.)
Texts : Tanner and Allen's Analytic Geometry, Byerly's Dif-
ferential Calculus.

4. Theory of Equations and Determinants. *M. W. F., at 9:30.* Professor FELLOWS. (Junior Elective.)
Texts: Burnside and Panton's Theory of Equations, and Gordon's Determinants.
5. Analytic Mechanics. *T. Th. S., at 9:30.* Professor FELLOWS. (Junior Elective.)
Text: Loney's Statics and Dynamics.
6. Integral Calculus. *T. Th. S., at 9:30.* Assistant Professor DEFOE. (Junior Elective.)
Text: Byerly's Integral Calculus.
7. Advanced Mechanics. *M. W. F., at 10:30.* Assistant Professor DEFOE. (Graduate Elective.)
8. Theory of Functions (First course). *T. Th. S., at 8:30.* Assistant Professor DEFOE. (Graduate Elective.)
9. Theory of Functions (Second course). *M. W. F., at 10:30.* Professor FELLOWS.
10. Spherical Harmonics and Potential Functions. *T. Th. S., at 10:30.* Professor FELLOWS. (Graduate Elective.)
11. Infinite Series and Infinite Products. *First semester.* Professor FELLOWS.
12. Teacher's Course. *W., at 10:30.* Assistant Professor DEFOE. (Senior Elective.)

Required: For B. L. and A. B., and B. S. Nos. 2 and 3, 1a, 1b; for B. S. No. 1, 1a, 1b, 2, and 3; for the degree in Engineering, 1a, 1b, 2, 3, and 6.

Courses 7 and 11 are especially recommended to students of Engineering; 8 and 9 will be given in alternate years.

Astronomy.

Professor UPDEGRAFF.

1. Popular Astronomy. Lectures, recitations, and occasional night observations. Treatment non-mathematical. *T. Th. S., at 9:30.* (Elective.)
Text: Newcomb's Popular Astronomy, Library Edition.
2. General Astronomy. Lectures, recitations, and occasional night observations. *M. W. F., at 11:30.* (Sophomore and Junior.)
Trigonometry required. Text: Young's General Astronomy.

- 3a. Practical Astronomy (for Seniors in Civil Engineering). Recitations and practical work in the Observatory. *First semester, three hours a week.*

Text: Doolittle's Practical Astronomy.

- 3b. Geodesy and Least Squares (for Seniors in Civil Engineering). Recitations and practical work in the field. *Second semester, three hours a week.*

Text: Gore's Geodesy.

4. Spherical and Practical Astronomy. Problems of Spherical Astronomy. Theory and practical use of instruments. *Three hours a week.* (Junior Elective.)

Calculus required. Text: Chauvenet's Spherical and Practical Astronomy.

5. Spherical and Practical Astronomy. Continuation of Course 4. *Three hours a week.* (Senior Elective.)

6. General and Practical Astronomy. A combination of Courses 2 and 4. *Three hours a week.* (Senior Elective.)

7. Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*

(Graduate Elective.)

A thorough course in Calculus and Analytic Geometry is required.

Text: Watson's Theoretical Astronomy.

Required: For B. S., Course 2; for B. S. in C. E., Courses 3a and 3b.

The Laws Astronomical Medal:

An engraved medal, called the "S. S. Laws Astronomical Medal," is offered annually at Commencement to the student who stands highest in Astronomy, and has at the same time attained a high average of general scholarship. An original thesis written on some astronomical subject, and showing capacity for scientific investigation, is required.

The Laws Observatory:

The Observatory, a building 84 feet long from east to west, and from 14 to 30 feet wide, stands on an elevated portion of the campus. The equipment consists of a 7½-inch equatorial refracting telescope by Merz and Sohne, of Munich, a 2 1-10-inch transit instrument by Brunner, of Paris, an altitude and azimuth instrument of 2½ inches in aperture, sidereal and mean-time clocks, sidereal break-circuit chronometer, chronograph, sextant, micrometer, and outfit of smaller instruments.

Clocks and instruments are mounted on piers of solid masonry, isolated from the floors and walls of the buildings, and are provided with

the usual electrical connections. The dome of the telescope is 18 feet in diameter. A cone of 14 feet in diameter, which revolves on balls, shelters the altitude and azimuth instrument. The transit room, which has three slits in the walls and roof for observation, contains the transit instrument, chronograph, and sidereal clock.

There is in the Observatory a valuable collection of astronomical books and pamphlets, and several of the best astronomical periodicals are regularly received.

In the year 1880, Dr. S. S. Laws, then President of the University, contributed largely from his private funds toward the improvement of the Observatory building and instruments. In recognition of his generosity the Board of Curators named the Observatory in his honor.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

1. **Elementary Physical Measurements.** This course is designed for Agricultural students. It enables them to become acquainted with the more important and simple methods used in the qualitative and quantitative study of physical phenomena. Lectures or recitation, *W.*, at 11:30, Laboratory, *M. S.*, at 1:30. Mr. GRIFFITH.
(First year Agricultural.)

2. **Elements of Physics.** A course designed especially for Medical students. Lectures and recitations, *M. F.*, at 11:30, Laboratory, *T.* at 1:30. Mr. GRIFFITH.
(First year Medical.)

Text: Daniell's Physics for Medical students.

3. **Mechanics, Sound and Light.** *First semester*, Experimental lectures and recitations, *T. S.*, at 10:30; Laboratory, *Th.* at 1:30. *Second semester*, Lecture, *Th.*, at 1:30; Laboratory, *T. S.*, at 1:30. Professor LIPSCOMB.
(Freshman and Sophomore.)

Required in all B. S. courses, elective in A. B. and B. L.

Text: Carhart's University Physics, Part I.

4. **Heat, Electricity, and Magnetism.** *First semester*: Lectures, *M. F.*, at 10:30; Laboratory, *W.*, at 1:30. *Second semester*: Lecture, *W.*, at 10:30; Laboratory, *M. F.*, at 1:30. Professor LIPSCOMB.
(Sophomore.)

Required in the Mathematical-Physical course, and open to all Academic students who have taken course 3, or its equivalent.

Texts: Carhart's University Physics, Part II; Laboratory, Nichols (Vol. 1), and Gee & Stewart.

5. A course in General Physics, designed especially for Engineering students. Lectures and Laboratory, *three times a week*. Professor LIPSCOMB. (Sophomore.)

Required of all Engineering students, elective in Academic courses. Text: Anthony and Brachett.

- 6a. Special Laboratory work in Mechanics, Heat and Light. *First semester, M. W. F., at 1:30*. Professor LIPSCOMB or Mr. GRIFFITH. (Third year Agriculture.)

Elective in Academic courses.

- 7a. The practical Application of Electricity in Medicine and Surgery. *First semester, T. Th. S., at 9:30*. Professor LIPSCOMB. (Fourth year Medical.)

Elective in all Academic courses. Text: Liebig & Rohe.

- 8a. The Theory of Heat. *First semester, T. Th. S., at 10:30*. Professor LIPSCOMB. (Elective.)
Text: Maxwell.

- 8b. The Theory of Light. *Second semester, T. Th. S., at 10:30*. Professor LIPSCOMB. (Elective.)

The basis of the work in this course is Preston's Theory of Light.

- 9a. Advanced Experimental Work in Heat, Light and Electricity. *First semester, T. Th. S., at 1:30*. Professor LIPSCOMB. (Elective.)
9b. Mathematical Theory of Electricity and Magnetism. *Second semester, T. Th. S.* (Elective.)

Courses 8a, 8b, 9a and 9b are open only to those students who have taken 3 and 4 or their equivalent.

10. Laboratory. Advanced measurements and special investigations. *Two to five times a week*. (Graduate and Senior Elective.)
Open only to those who have had courses 3, 4, 8a, 8b, 9a and 9b, or an equivalent amount of work.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. MOORE.

1. Experimental Chemistry. Laboratory work and recitations. *Both semesters, three times a week*.

This class is intended for those who have not previously taken Chemistry. It is required of students in the Agricultural and Mechanic Arts courses and is elective for students in the A. B. and B. L. courses.

2. General Inorganic Chemistry. Experimental lectures, at 11:30, Laboratory work and recitations, at 1:30. *Both semesters, three hours a week.*
3. Organic Chemistry (Introductory Course). Lectures, laboratory work, and recitations. *First or second semester, three hours a week.*
4. Organic Chemistry. Lectures, laboratory work, and recitations. *Both semesters, three hours a week.*
- 5a. Qualitative Chemical Analysis. Laboratory work, with lectures. *First semester, three hours a week.*
- 6b. Quantitative Chemical Analysis. Laboratory work. *Second semester, three hours a week.*
7. Advanced Laboratory Work. Inorganic and Organic. *Daily.*
- 8b. Chemical Theory. Lectures and recitations. *Second semester, three hours a week.*

For this course 2 and 3 or 4 should be taken.
- 9a. History of Chemistry. Lectures and recitations. *First semester, three hours a week.*

For this course 2 and 3 or 4 should be taken.
- 10b. Physical Chemistry. Lectures, laboratory work, and recitations. *Second semester, three hours a week.*
11. General Chemistry (for Medical students). Lectures, laboratory work and recitations. *Three times a week.*
- 12b. General Chemistry (for Medical students). Lectures, laboratory work and recitations. *Second semester, three hours a week.*
- 13b. Metallurgy. Lectures and recitations. *Second semester, three hours a week.*
- 14a. Technical Chemistry. *First semester, three hours a week.*

Required for B. S., 2; for B. S. in S. E., 14a; for B. S. in C. E., M. E., and E. E., 2 and 13b; for B. Agr., and course in Mechanic Arts, 1; for M. D., 11, 12b.

Elective: All courses.

Where days and hours are not stated these will be arranged to suit the class.

Geology and Mineralogy.

Assistant Professor MARBUT.

1. **Physiographic Geology.** Lectures, written exercises, laboratory and field work. *M. W. F., at 10:30.*

(Freshman and General Elective.)

Course 1 is designed both for those students who desire a general knowledge of the processes involved in the development of the earth, and as a foundation for those who intend to pursue the subject further. The earth is treated as an organism and the course is intended to furnish a grasp of its main constituents and their distribution and arrangement as well as the processes which have produced and arranged them. It is primarily a study of evolution as applied to the earth.

2. **Historical Geology and Paleontology.** Laboratory and field work with occasional lectures. *Three times a week.* (Elective.)

This course is open to those students who have had courses in Zoology.

3. **Meteorology.** Recitations, lectures and laboratory work. *First semester, three times a week.*

(Elective.)

4. **Mineralogy and Crystallography.** Recitations and laboratory work. *One semester, three times a week.* (Elective.)

5. **Economic Geology.** Lectures, recitations and laboratory work. *Second semester, T. Th. and S., at 9:30*

(Agriculture.)

6. **Petrography.** Lectures and laboratory work. *Three times a week with occasional conferences.*

(Senior and Graduate Elective.)

This course is open only to those who have taken courses in Mineralogy and Crystallography and in General Geology.

7. **Geomorphology.** A course in geographic evolution. Lectures, library, laboratory and field work. *Three times a week.*

(Senior and Graduate Elective.)

Open to students who have had course 1.

Biology.

Professor AYERS, Mr. THOM, Mr. JACKSON.

A. GENERAL BIOLOGY AND ZOOLOGY.

The following courses are designed and arranged for three classes of students: (a) those who desire to become acquainted with the fundamental principles and aims of the science, (b) those who are or intend pursuing the course in Agriculture, Medicine or Sanitary Science, and (c) those who wish either to teach Biology or to penetrate deeper into the phenomena of life and the resultant organization.

2. General Biology. This course is intended to give a general survey of the whole field of biological science, and to acquaint the student, by personal observation, with a series of types of animals and plants, studied in the laboratory. The object in view is not to burden the student with systems, facts or technicalities of the text-books, but to direct attention to such subjects as best serve the needs of a liberal education, and at the same time give some preparation for the professional courses in Agriculture, Medicine, Sanitary Science, and the specialist in Zoology or Botany. Since Biology stands for a group of sciences, each with distinct aims, problems and methods, the main purpose of the course will be to furnish the basis for a comprehensive understanding of this body of science, and to make clear its subject matter, its principal subdivisions, its scope, its relations to other sciences and its import for the daily life of the race and the individual. Lecture *T.*, at 10:30; Laboratory, *Th. S.*, at 1:30. Professor AYERS, Mr. THOM, and Mr. JACKSON. (Freshman.)

Texts: Hertwig, Principles of Zoology; Wilson, the Cell in Development and Heredity; Parker, Elementary Biology, Parker and Haswell, Zoology.

4. Vertebrate Morphology. A detailed study of the anatomy of a typical series of vertebrate animals. It is designed for those who wish to make a thorough study of Physiology, for the Medical student, and for the specialist in Zoology. *Three times a week.* (Sophomore and Undergraduate Elective.)
5. Histology. The microscopic anatomy and cytology of vertebrates. *Three times a week.* (Undergraduate Elective.)

Text-books: Schaefer, Essentials of Histology; Piersol, Normal Histology; Hertwig, The Cell and Tissues; Wilson, The Cell in Development and Heredity.

6. Embryology of Vertebrates. *Three times a week.* Text-book: Marshall, Vertebrate Embryology.
(Undergraduate and Graduate Elective.)
7. Neurology and Terminal Sense Organs. *Three times a week.* Edinger, Vorlesungen ueber den Nervencentralorgan.
(Undergraduate and Graduate Elective.)
8. Theoretical Biology. *Three times a week.* Lectures and collateral reading in the works of Lamarck, Darwin, Huxley, Romanes, Poulton, Weissman, Whitman and others.
(Undergraduate and Graduate Elective.)
20. Investigators' Course. For the training of students in zoological-anatomical inquiries. Each student is required to select some unsolved problem of suitable character and to add to the sum of human knowledge by the solution of it by his own powers of observation and thought.

B. BOTANY.

Mr. THOM.

1. General Botany. (See course in General Biology.) (Freshman.)
2. Structural Botany and Comparative Morphology. *Three times a week.* (Elective.)
3. Plant Physiology. Lectures and Laboratory. *Three times a week.* (Elective.)
4. Ecology. Lectures and Field Work. *Three times a week.* (Elective.)

Animal Physiology.

Professor CONNAWAY, Mr. MUNDAY.

The following courses are offered:

1. Animal Physiology (Minor Course). One lecture and two laboratory periods a week. *Second semester, T. Th. S., at 8:30.*
Required in B. S. course No. 3. Elective in A. B., B. S. Nos. 1 and 2, and Normal courses. Text: Martin's The Human Body (Advanced Text); Laboratory Manual: Foster and Langley's Practical Physiology.

2. Advanced Course. (Elective.)

Lectures, recitations, laboratory work, and reports upon assigned readings. Offered for students who desire to go more deeply into the literature and experimental methods of physiology than is possible in the Minor Course.

The following subdivisions are made:

(a) Physiology of the Blood, Digestion, Absorption, Secretion and Excretion. *Three times a week.*

(b) Physiology of the Contractile Tissues, Circulation and Respiration. *Three times a week.*

(c) Metabolism, Nutrition, Dietetics, and Reproduction. *Three times a week.*

(d) Central Nervous System and Special Senses. *Three times a week.*

Text: Foster's Physiology. Collateral reading: other advanced text-books and Journals of Physiology. Laboratory Manual: Stirling's Practical Physiology. Reference Manuals: Sanderson, Schenck, Langendorff, Halliburton, Salkowski (in library).

Open to all who have completed courses in physics, chemistry, anatomy, and histology equivalent to the required work in B. S. course No. 3.

Course (d) is open to Juniors in the Normal and all Academic courses. Credit is given in the Medical Course for the above advanced work.

3. Teachers' course. *One hour a week. Time to be arranged.*

The purpose of this course is to furnish instruction in methods of teaching Physiology, and to give the Normal students an opportunity of applying their knowledge. Each student is required to make special preparation upon some assigned topic, both as to the subject-matter, and the methods of presenting it. The laboratory demonstrations necessary to the proper presentation of the topic must be prepared by the student. Course 1 or 2 must precede or accompany this course.

4. Investigation.

(a) The verification of the results of some recent physiological research. (Senior Elective.)

(b) Original work along some selected line.

(Graduate Elective.)

Open to students who have completed course 2, and show an aptitude for this work. *Time to be arranged with the instructor.*

Elocution.

Professor SCOTT.

The following courses are offered :

1. Foundation theory and practice of vocal culture and expression. Breathing for conscious voice-support; phonetics applied to syllabic form and enunciation; stress, inflection, quantity and quality; phrasing; movement and rhythm; melody, intonation, and cadence; analysis of short prose and poetic passages, for the recognition and establishment of the correlation of utterance with thought and feeling. *First semester, three hours a week.* Text-book, Raymond's Orator's Manual.

2. Principles of bearing, walk, and gesture; the practice of short oratorical extracts, with the study of the *rationale* of appropriate utterance and action. To be followed by the study of more extended passages and entire compositions, prose and poetic, as readings and recitations. This course must be preceded by course 1. *Second semester, three hours a week.* Text-book, Raymond's Orator's Manual.

3. Advanced work. The interpretative study of plays, scenes, poems, and imaginative literature generally. Selections will be made, jointly by the Professor in charge and the class, from Shakspeare, Milton, Scott, Tennyson, Browning, Dickens, Poe, Ruskin, and other representative writers. The emotional and spiritual, as well as the intellectual, elements of literature will be the objects of study and embodiment. This course may run through two semesters, and must be preceded by courses 1 and 2. *Three hours a week.*

4. Normal course. This course is offered to students in the Normal Department, and counts toward the Academic and Normal degrees. It will comprise: (a) The criteria of vocal expression—time, pitch, quality, and force—with copious examples; (b) the method of teaching children to read. *One hour a week, for two semesters.* Text-book: S. H. Clark's How to Teach Reading in the Public Schools.

For 1900 three prizes in cash—one of \$25, one of \$15, and one of \$10—are offered for public competition in declamation. The contest will be held in the second semester, and is open to students of Elocution only.

SCHOOL OF JOURNALISM.

Art and History of Newspaper Making. History of Printing. Evolution of the Newspaper. Typography, Presswork, Engraving.

Newspaper Making. Business management; cost and revenue; advertising; editorials, reporting, clipping from exchanges; method of criticism, etc.

Newspaper Practice. Exercises in editorial writing, in reporting, in editing copy, handling telegraph service, condensation, interviewing, gathering news, etc.

Current Topics. Constitutional law; Political Science; History of the United States and of Missouri; economic questions; the libel law and other laws pertaining to newspapers; live issues of the United States and foreign countries; study of the best newspaper models; lectures by men engaged in the active work of the profession.

A thorough knowledge of English and general literature is indispensable to every journalist.

1. *English.* This study will be pursued on the side of English History, Composition, and Rhetoric throughout the course.

2. *History.* Modern History will be required and also General History. The study of Mediæval and Ancient History will not be required, but may be taken as elective work.

3. *Political, Economic, and Sociological Studies.* Political Economy, Political Science, Finance, History of Banking and Coinage, History of Industrial Development, Constitutional law, International law, and Sociology will be studied throughout the entire course.

An opportunity will be given to acquire a good reading knowledge of such Modern Languages as French, German, and Spanish. They will not be required, but may be taken as elective work.

III. Normal Department.

FAULTY.

- RICHARD HENRY JESSE, LL. D.,
President, and Professor of Ancient and Mediaeval History.
- JOSEPH MARTIN WHITE, A. M.,
Professor of Pedagogy.
- JOHN CARLETON JONES, A. M., Ph. D.,
Professor of Latin Language and Literature.
- EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.
- HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.
- GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology and Mineralogy.
- MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.
- WILLIAM GWATHMEY MANLY, A. M.,
Professor of Greek Language and Literature.
- MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, and Assistant Professor of Mathematics.
- JOHN MILLER BURNAM, Ph. D.,
Assistant Professor of Latin Language and Literature.
- JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Physiology (Human and Comparative).
- FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History and Political Economy.
- JOHN PICKARD, A. M., Ph. D.,
Professor of Classical Archaeology, and Assistant Professor of Greek.
- FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.
- LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.
- HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.
- SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.
- ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,
Professor of Elocution.

CURTIS FLETCHER MARBUT, B. S., A. M.,
*Assistant Professor (in charge) of Geology and Mineralogy, and Acting
Curator of the Geological Museum.*

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

CHARLES THOM, A. B., A. M.,
Instructor in Biology.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

FELLOWS.*

HENRY HERRENLEBEN, B. L.,
Fellow in Germanic Languages.

JOHN LAWRENCE GERIG, A. B.,
Fellow in Romance Languages.

ROYALL HILL SWITZLER, A. B.,
Fellow in Mathematics.

CLARENCE MARTIN JACKSON, B. S.,
Fellow in Biology.

BERT MUNDAY, M. S.,
Fellow in Physiology.

*Fellows are elected for one year and are required to teach five or six hours a week.

Theory and Practice of Teaching.

Professor WHITE.

Admission:

The requirements for admission to the work of the Normal Department are the same as to any course in the Academic Department. See pages 21-24.

Courses of Instruction:

There are two distinct courses, one Elementary and one Advanced.

I. ELEMENTARY COURSE.

The Elementary Course is intended to prepare teachers for the public schools of the State. Students who complete the work may receive a State Certificate which authorizes them to teach in the public schools of Missouri for a period of two years from the date of the certificate.

Persons desiring to take this course must meet the following requirements:

1. They must, before receiving the certificate, be free from all entrance requirements, and in making up such requirements, must not have taken within and without the University, more than eighteen hours of work.

2. They must take or must have taken at least twelve (12) hours' Academic work from the Freshman class of one of the courses outlined on pages 75-77 of this catalogue.

3. They must, during the Freshman or a later year, take three (3) hours a week of Elementary Pedagogics below outlined, and two (2) hours a week of Drawing in the College of Agriculture and Mechanic Arts, throughout the year, in place of five (5) hours a week of the regular Academic work required in the year and the course in which they belong. The omitted Academic work must, however, be later completed by all candidates for Academic degrees.

4. Any student who desires to do so may take Shopwork for two and one-half hours a week for two semesters, or five hours a week for one semester, instead of one hour of the twelve (12) hours of Academic work required under 2 above. Such omitted Academic work must, however, be done later by candidates for Academic degrees.

The following are the required studies in the Elementary Course in Pedagogics :

- 1a. Elements of Pedagogy. *First semester, T. Th. S., at 11:30.*
- 1b. (1) School Management; (2) Methods of Teaching. Lectures. *Second semester, T. Th. S., at 11:30.*

For the required course in Drawing, see Index under "Drawing."

II. ADVANCED COURSE.

The Advanced Course is intended to prepare students as teachers in the Secondary Schools of the State. This course leads to the Normal diploma, which entitles the holder to teach for life in any public school in Missouri. This diploma is given to graduates of the Academic department who have met the following conditions :

1. In the Junior year, the application of three (3) hours in each semester to the work in Pedagogics—the time to be taken out of the electives. This work counts toward any Academic degree.

2. In the Senior year, the application of three (3) hours each semester to the work in Pedagogics. This work must be done in addition to the fifteen (15) hours required for Academic work in that year.

3. The Normal diploma will be conferred upon graduates of the Missouri College Union and of other reputable colleges and universities, in so far as their work is equivalent to that done in this University for Academic degrees, upon the completion by such graduates of not less than eight (8) hours a week for one year in Pedagogy and allied subjects.

The following courses are offered :

- 1a. History of Education. Lectures. Essays, Reports and Discussions.
First semester, M. W. F., at 10:30. (Junior.)
- 1b. Educational Classics. Readings, Reports, and Discussions. *Second semester, M. W. F., at 10:30. (Junior.)*
2. Science of Education. Lectures, Recitations, and occasional Essays.
T. Th. S., at 3. (Senior.)

This course must be preceded or accompanied by course 1 in Philosophy, page 88. Texts: Rein's Outline of Pedagogy, McMurry's General Method, Lange's Apperception, Bain's Education as a Science.

- 3a. School Supervision. Lectures and Recitations. *First semester, M. W. F., at an hour to be selected.*

(Junior and Senior Elective.)

4. Pedagogical Conference. Observations in the public schools of Columbia. Study of special questions.

Throughout the year, twice a week, at an hour to be selected. (Elective. Open to all students of the department.)

Courses 1 and 2 are required for the Normal Diploma and Life Certificate.

Degree of Bachelor of Pedagogics:

The degree of Bachelor of Pedagogics (B. P.) will be conferred on any graduate of the Academic department of the University holding the Normal Diploma and Life Certificate, upon application to the Board of Curators after two years of successful teaching, and upon the presentation to the Faculty of a thesis. This is to be known as the thesis for the Bachelorship in Pedagogy, and must be submitted by the candidate not later than May 1 preceding the Commencement at which the conferment of the degree is sought. The thesis must discuss a subject belonging to one of the courses of study in Pedagogy, and must show original treatment or give evidence of independent research. The number of words in the thesis must not be less than five nor more than ten thousand.

Courses for Teachers in the Summer School:

In the summer of 1899, the University will offer courses in Agriculture and Horticulture, Biology, Chemistry, English, French, Greek, German, History, Latin, Mathematics, Physics, Shopwork and Drawing. They are especially for the advantage of public school teachers of the State, though open in some subjects to regular students in the University. The first term of the summer work begins June 5. Circulars giving full details may be had upon application by letter to the University..

IV. Department of Law.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ALEXANDER MARTIN, LL. D.,
Professor of Law and Dean of the Faculty.

JAMES AULL YANTIS, LL. B.,
Professor of Law.

JOHN DAVISON LAWSON, LL. D.,
Professor of Law.

ANDREW WALKER MCALESTER, M. D., LL. D.,
Lecturer on Medical Jurisprudence.

Hon. ELMER B. ADAMS, LL. D., Judge of the U. S. District Court for
the Eastern District of Missouri,
Non-resident Lecturer on the Law of Wills and Administration.

Hon. JAMES A. SEDDON, LL. B., Ex-Judge of Circuit Court of St. Louis,
Non-resident Lecturer on Commercial Law.

Hon. FRANCIS M. BLACK, of Kansas City, Ex-Chief Justice of Missouri,
Non-resident Lecturer on Equity Jurisprudence.

Hon. JAMES B. GANTT, LL. D., Chief Justice of the Supreme Court of
Missouri,
Non-resident Lecturer on Corporations.

Requirements for Admission:

If unknown to the Faculty, the candidate must bring satisfactory testimonials of good character.

JUNIOR CLASS.—For admission to the Junior Class, no examination in Law is imposed. Students may be admitted at any time during the session by fulfilling the requirements for entrance and by passing an examination upon the work in Law accomplished by the class at the date of the examination.

It is the purpose of the University to raise gradually the standard of Academic requirements necessary for admission to the department of Law. Candidates for admission are earnestly advised, therefore, to complete, if they can, a college course, or at least a full course in a good High School.

Students may enter by certificate or diploma or by examination.

Entry by Certificate or Diploma.—Any applicant presenting to the Committee on Entrance by Diploma a certificate or diploma from the President or Principal of any approved High School, Academy, Normal

School or College, showing that in any course of study in which said School, Academy or College has been approved by the University for the Academic Department, the applicant has accomplished with passing grades all the work required for admission to the Law Department as hereinafter prescribed, may in the fall of 1899 and 1900 be admitted without examination. See Approved Schools, page 27.

Certificates or diplomas indicating or clearly implying the requisite qualifications for admission to the Law Department as hereinafter prescribed will also be honored. *First*, from all Universities and Colleges which the Committee on Entrance by Diploma shall find to be of unquestionable high standing. *Second*, from all Normal Schools, High Schools, and Academies whose courses and quality of instruction shall be found by the Committee on Entrance by Diploma to correspond with the standard of requirements for admission to the Law Department of the University as hereinafter stated under the head of Entrance by Examination.

In the absence of such certificates or diplomas the applicant for admission must pass satisfactory examination before the Professors of the Academic department for the examination of applicants for admission to said department, as follows:

Entrance by Examination.—A unit means a year's work (nine months) in one subject in a good High School, Normal School, or College, with five periods a week in the class-room or laboratory, each recitation lasting about forty minutes. Requirements for admission by examination are estimated in units, as will appear below.

In the fall of 1898 the requirements for admission were four units, as follows:

1. *History.*—The applicant was examined in the equivalent of the work given in Myer's General History—one unit.

2. *English.*—The examination was on the essentials of English Grammar (any text-book of High School grade) and Composition (no text-book). He was required to have read at least as much literature as is required in the first year of a good High School—one unit.

3. *Mathematics.*—The applicant was required to have a knowledge of Algebra, the equivalent of that found in Milne's High School Algebra up to Quadratic Equations. Instead of Algebra, Geometry was accepted as given in Phillips and Fisher's Plane Geometry—one unit.

4. *Latin.*—The examination in Latin was required to show a thorough mastery of Collar and Daniell's First Latin Book, or Gildersleeve's Latin Primer, or some other beginner's book fully equivalent to these—one unit.

These units represent the first year's work of an approved High School. The student was required to pass without condition the examinations on at least three out of the four subjects required. On one of the

four subjects he might be conditioned, said condition to be made up in the first year in the University under arrangements to be approved by the Academic Professor of the subject.

In the fall of 1899 the requirements for admission, in addition to the requirements for admission in 1898, will be four units, as follows:

1. *History*.—Green's Short History of the English People—one unit.
2. *English*.—Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant will be expected to have read, at least, as much literature as is required in the second year of a good High School—one unit.
3. *Latin*.—Three books of Cæsar's Gallic War, and the Composition based thereon in Moulton and Collar's "Preparatory Latin Composition," or in Daniell's "New Latin Composition." For the Cæsar Nepos may be substituted—one unit.

4. *One unit* to be offered in any one of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. These units, along with the units of 1898, will represent two years' work in an approved High School. The applicant may be conditioned on any two units, both to be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise one unit must be made up in the Junior year, and the other in the summer thereafter, or in the Senior year.

For the fall of 1900 the requirements for admission will be the same as those prescribed for the fall of 1899.

In the fall of 1901 the requirements will be twelve units, as follows:

1. *English*.—Three units—the same as prescribed for admission to the Academic Department—see page 21.
2. *Latin*.—Two units—the same as prescribed above for the year 1899.
3. *History*.—Two units—the same as prescribed above for the year 1899.
4. *Five units*, to be offered from any of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. Any number of units may be offered in one subject, or only one may be offered in one subject. These twelve units represent three years' work in an approved High School, which is approved for the Academic Department of the University.

The student may be conditioned upon two units, both of which must be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise, one unit must be made up in the Junior year, and the other in the following summer, or in the Senior year.

No student will be allowed to graduate in Law until all Academic conditions that may have been incurred at entrance have been made up within the time prescribed, and under arrangements approved by the Academic Professors of the subjects in which the conditions have been incurred.

In any summer, students conditioned at entrance in Academic studies and those proposing to enter may avail themselves of the Summer School of the University, and receive credit for work done therein according to the rules of said school. See Appendix.

All examinations for entrance will be under the charge of the Academic Professors of the subjects required or offered for admission.

SENIOR CLASS.—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, is possessed of the academic education and moral character required for admission to the Junior class, and has passed a satisfactory examination upon the studies of the Junior year. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the term, and the applicant will be admitted to the class as a candidate for a degree, upon condition that he pass at the time appointed a satisfactory examination on such branches. But if the applicant achieves inferior grades generally on the subjects upon which he has passed examination his case will not be an exceptional one for entrance upon condition.

A certificate of admission to the bar is not accepted as a qualification for entrance to advanced standing or to the Senior class.

No one is permitted to pursue in one year the full course of two. No member of the Junior class is admissible to instruction in the Senior course.

GRADUATE CLASS.—No one will be admitted to this class as a candidate for the degree of LL. M. unless he holds the degree of LL. B. from the Law department of this University, or is a graduate of some other law school, whose course of instruction and study, upon which his degree is predicated, is equivalent to the course of instruction and study required for the corresponding degree in the Law Department of this University. No admission to the Senior class or the Graduate class will be permitted after two weeks from the commencement of the school year.

SPECIAL CLASS.—For admission to instruction as special students, the same moral and academic qualifications are required which are prescribed for admission to the other classes. No qualifications in law are required.

COURSES OF STUDY.

The principal object of the courses of study adopted in the school is to qualify its graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the school to cram its students for the purpose of qualifying them to pass the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedial procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to the bar. As the degree of LL. B. from this Department entitles the graduate to admission to the bar of the State of Missouri, the Faculty can not overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is a great similarity in the general statute and judiciary law of the Western, Northwestern, and Southwestern States, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said States.

Undergraduate Course:

The undergraduate course covers a term of two years. There are two classes—Junior and Senior. Instruction is given daily to these classes, in the form of lectures, recitations and examinations upon the text-books recommended, and upon leading cases furnished by the Faculty. Every Tuesday they participate in the exercises of a Moot-court.

I. The Junior class receives instruction in the following subjects:

1. Torts, Elements of Law of Real Property, and Criminal Law; by Professor YANTIS.
2. Contracts, Bailments, Personal Property, Sales; by Professor LAWSON.
3. Negotiable Instruments, Parliamentary Law; by the DEAN, and Special Lecturers.

II. The Senior class receives instruction in the following subjects:

1. Real Property. Evidence; by Professor YANTIS.
2. Equity Jurisprudence, Pleading and Practice at Common Law, in equity and under the code, Corporations, Constitutional Law; by the DEAN, and Special Lecturers.
3. Insurance, Partnership, International Law; by Professor LAWSON.
4. Law of Wills and Administration; by Special Lecturers.

The text-books recommended are as follows:

For the Junior Year—

On Elements of Law and Real Property.....	Warvelle
On Torts.....	Cooley
On Contracts.....	Lawson
On Agency.....	Story, Meecham
On Sales	Lawson's Cases
On Bailments.....	Lawson
On Personal Property.....	Lawson's Cases
On Domestic Relations.....	Browne, Schouler
On Negotiable Instruments.....	Tiedeman
On Parliamentary Law.....	Roberts, Cushing
On Criminal Law.....	Hawley and McGregor

For the Senior Year—

On Real Property.....	Tiedeman
On Wills.....	Chaplin
On Evidence.....	Chase's Stephen's Digest
On Insurance.....	Richards
On International Law.....	Lawrence, Glenn
On Equity Jurisprudence.....	Bispham, Merwin, Fetter
On Pleading and Practice.....	McKelvey, Bliss, Heard, Desty
On Constitutional Law.....	Black, Cooley
On Corporations.....	Clark, Thompson, Murfree
On Partnership.....	Pollock

Graduate Course:

This course is open to graduates of the Law department and to those of other law schools who have completed an equivalent course of study.

The object of the Graduate course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures and recitations on the following subjects:

Constitutional Law, Contracts, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student in this course is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the

subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students the instruction in this course.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Underhill on Trustees; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland's Jurisprudence; Pattison's Forms.

Special Course:

Students who do not wish to take any of the full courses, and who are not candidates for any degree, will be permitted to take an elective course, and pursue any branches of instruction given in any of the courses of the Department, the exercises of which do not conflict with one another or exceed the hours of work permitted to students in the department. They will be classed as special students, and will receive from the Faculty certificates of the time spent in the study of the law and of the work therein accomplished.

METHODS OF INSTRUCTION.

In the Department of Law instruction is given by means of Lectures, Recitations, Examinations, Seminariums, Moot-courts, and the required study of Treatises and Cases.

The first benefit inuring to the student who enters a good law school is to learn how to study law, as distinguished from merely reading it. A student in an attorney's office is too apt to continue, in his study of law, the superficial habit acquired by him in the perusal of newspapers, literary periodicals and novels.

On entering the school he is instructed in the proper method of reading treatises and reports of cases, of examining questions of law, of taking notes of lectures, and of handling digests, dictionaries and compilations of the law.

The Law Faculty is satisfied from experience that the highest results can not be reached by lectures alone, however clear and thorough they may be; but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subject upon which he has received instruction, he should be required to stand frequent examina-

tions on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the Professor for his investigation. In addition to lectures and recitations, the classes, after division into sections, are subjected to quizzes conducted by members of the class, appointed by the Professor, for that purpose. The members are also required to explain and develop in the lecture-room, orally and in writing, subjects assigned to them by the Professors. A combination of these different methods has, in the opinion of the Faculty, produced the most satisfactory results.

Moot-Court:

Every Tuesday a Moot-court is held, in which all Law students participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and when the cause is supposed to be in the Supreme Court, in addition to the pleading, papers are prepared necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, ruling upon the admission or exclusion of evidence, motions for new trial, in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Faculty presides at the trial, determining all preliminary and incidental motions. A member of the Senior class or Graduate class is called to sit as special judge in each cause, who, at the next court held by the same professor, gives his opinion in writing, subject to appeal to the member of the Faculty so presiding at the trial. Practical instruction in pleading is given by requiring half of the members of a class to draft pleadings in causes assigned to them, and to submit them to the other half. The pleadings thus drafted are discussed and settled in the class room, in the presence of the Professor giving instruction on that subject, and under his rulings.

DEGREES AND HONORS.

Degrees:

Members of the Senior class who have successfully passed the examinations of the Senior year will be entitled to receive the degree of Bachelor of Laws. Members of the Graduate class who have successfully passed the prescribed examinations will be entitled to receive the degree of Master of Laws.

All who receive from this University the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all courts of the State of Missouri.

Honors:

Whenever a candidate for graduation attains a high degree of excellence in his class-work the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction; and the words *cum laude* or *magna cum laude* will be incorporated in the diploma. In determining the required degree of excellence the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.

The members of the Senior class are all invited to write essays upon some subject in law, assigned to them by the Faculty before January 1 of each year. The essays so written are submitted to a committee of judges charged with the duty of designating the best two of said essays. The names of the authors of the best two essays are placed on the Commencement program. Students not writing essays as aforesaid, and not excused therefrom by the Law Faculty, shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation.

Prizes:

A prize of \$50, provided in the endowment fund of the Hon. James S. Rollins, is awarded each year, at Commencement, to the member of the Junior Law class, who by superior scholarship and moral conduct, has shown himself entitled thereto.

The Edward Thompson Company, Law Publishers, of Northport, New York, give annually to the author of the best thesis submitted by members of the Senior Law class a prize consisting of a complete set of their famous American and English Encyclopaedia of Law. This set consists of thirty-one volumes, and is valued at \$100.

ADVANTAGES.

The advantages now offered by the University of Missouri for instruction in the science and practice of common law and equity, as prevailing in the United States, have been greatly increased within the last few years.

Accommodations:

Since the destruction of the main building of the University by fire, January 9, 1892, the Curators have erected a large, commodious structure for the use of the Law department. It contains a spacious library room, two large lecture rooms, moot-court and clubrooms, quiz rooms, and offices for the Professors.

Libraries:

The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing every year, the Thirty-eighth General Assembly of the State having in 1895 appropriated five thousand dollars to that end, which has been expended in the purchase of treatises and reports. All the decisions of the American courts are received as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and Professors. Members of the Law department have access also to the general library of the University.

Academic Facilities:

The connection of the Law department with the University enables the law student, without additional charge, to take instruction in other departments of the University, provided it does not interfere with his legal studies. Some members of every class have found it convenient to pursue such studies as Latin, French, Logic, English, Military Science, Political Economy, History, Stenography, Elocution, etc.

University Societies:

Members of the Law department are eligible to membership in the two literary societies of long standing in the University known as the "Athenæan" and the "Union Literary." They are also eligible to membership in the "Bliss Lyceum," to which members of the Law department alone are admitted.

These societies are nurseries of oratory, debate and parliamentary law.

GENERAL INFORMATION.

The Department of Law is open alike to men and women. Women that do not wish to practice in the courts often find a knowledge of law valuable to them as stenographers in lawyers' offices.

The enrollment of students in the Department for the current year is 106. See Index.

The Law department opens with the other departments of the University, on the second Tuesday in September, and closes on the first Wednesday in June of each year.

Examinations for admission will be held on the second Tuesday in September, at 9 o'clock a. m.

Examinations for admission may be accorded at other times, upon special request, to suit the convenience of applicants.

TUITION AND CHARGES.

The tuition is \$50 a year, all payable in advance: and is the same for admission to all classes and courses, except to the Graduate class, for which the charge is \$5. The charge for a diploma is \$3, for a certificate \$2. No other fees or charges are made. Appointees to Cadetships are not exempt from the regular tuition.

Graduates of the Law Department of the University of Missouri holding the degree of Bachelor of Laws, are admitted to the Graduate course of the Law Department upon a tuition of \$5 a year. The graduate of the University of the State of Missouri, Washington University, Westminster College, Central College, William Jewell College, Drury College, and Missouri Valley College, who has achieved the honor of standing first in order of merit in his class, will be admitted free of tuition for one year. The graduate must hold a Bachelor's degree.

For further information and catalogues, address

ALEXANDER MARTIN, Dean,
Columbia, Mo.

V. Department of Medicine.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,
Dean of the Faculty, and Professor of Surgery and Obstetrics.

WOODSON MOSS, M. D.,
Professor of Anatomy and the Practice of Medicine.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Physiology (Human and Comparative).

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

CHARLES THOM, A. B., A. M.,
Instructor in Biology.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

***FELLOWS.**

WILFORD ALEXANDER NORRIS, M. D.,
Fellow in Materia Medica.

BERT MUNDAY, M. S.,
Fellow in Physiology.

THOMAS ELMER MCGAUGH, A. M.,
Fellow in Pathology and Bacteriology.

FRANK L. HENDERSON, M. D.,
Lecturer on Ophthalmology.

*Fellows are elected for one year and are required to teach five or six hours a week.

G. R. HIGHSMITH, B. S., M. D.,
Lecturer on Railroad Surgery.

A. B. MILLER, A. B., M. D.,
Lecturer on Gynecology.

J. E. TEFFT, M. D.,
Lecturer on Genito-Urinary Surgery.

W. A. TICHENOR, M. D.,
Lecturer on Gynecology.

This department is open alike to men and to women.

REQUIREMENTS FOR ADMISSION FOR THE SESSION OF 1899-1900.

If unknown to the Dean the applicant must present a certificate of good moral standing.

Entrance by Diploma:

The applicant must present a Certificate or Diploma from a literary or scientific College, Normal School, or High School, approved by the University. See pages 27-32.

Entrance by Examination:

(a) *Value of Units:* A unit is defined as a year's work in any one subject with five (5) periods a week in class room or laboratory, each period being about forty (40) minutes. If the applicant passes a satisfactory examination in any one subject, covering one, two, or three years' work, credit will be given for one, two, or three units respectively.

(b) *Units Required for Entrance:* The applicant must pass on eight (8) units, of which at least one must be made in English and one in Algebra. For the remaining 6 units examinations may be taken on subjects chosen from the following list. One or more units may be made in any one subject.

LIST OF SUBJECTS.

English,	Latin,	Physics,	General Biology.
Algebra,	Greek,	Chemistry,	Botany,
Geometry,	German,	Zoology,	History.
French,			

(c) *Conditioned Students:* If the applicant pass on one unit of English and one unit of Algebra, and on four (4) additional units, he may be conditioned on the remaining two (2) units. The condition, however, must be removed before entrance upon the second year in Medicine.

(d) *Interpretation of One Year's Work:* The nature and content of the work are about what is required in any good High School. Where a text-book is indicated any other text of similar grade may be substituted.

English: *First year*—English Grammar (any text-book of High School grade), and Composition (no text-book). The applicant will be expected to have read at least as much literature as is required in the first year of a good High School—one unit. *Second year*—Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant will be expected to have read as much literature as is required in the second year of a good High School—one unit.

Algebra: *First year*—Milne's High School Algebra to Quadratics—one unit. *Second year*—Milne's High School Algebra from Quadratics to end—one unit.

Geometry: Phillips and Fisher's Plane Geometry—one unit.

History: *First year*—Myers' General History—one unit. *Second year*.—Green's Short History of the English People—one unit.

Latin: *First year*—Collar & Daniell's First Latin Book—one unit. *Second year*—Three Books of Cæsar, with Composition based thereon—one unit.

Greek: White's First Greek Book—one unit.

German: Harris's German Lessons, Joynes-Melssner's Grammar, Joynes-Melssner's Reader—one unit.

French: Conjugation of Verbs, regular and irregular; Rollin's Reader, completed; simple sight-reading as found in *Le Mariage d'Amour*, *L'Abbe Constantin*, or *Madame Therese*—one unit.

Physics: Gage's Introduction to Physical Science, with Laboratory work—one unit.

Chemistry: Shepard's Elements of Chemistry, with Laboratory work—one unit.

General Biology: Boyer, with Laboratory work—one unit.

Botany: Bergen's Elements of Botany, with Laboratory work—one unit.

Zoology: Colton's Zoology, with Laboratory work—one unit.

It is important that such applicants as are able to do so present to the President of the University a certificate from the President of a College or Normal School, or the Principal of a High School or Academy, showing what work they have finished with passing grades.

Students who enter the Academic Department and who contemplate taking a Medical degree in the future, may, by suitable selections of subjects in elective work, shorten the course in Medicine by at least one year. For example, the student may elect Physiology or Anatomy, or

both, from the first year, for six (6) hours a week for two semesters. Furthermore, the student may give some of his Academic electives to Physics, Chemistry, Histology, or Biology, all of which are required for the Medical degree.

COURSE OF INSTRUCTION.

First Year.

First semester :		Second semester :	
Anatomy.....	6	Anatomy.....	6
Histology	3	Histology	3
Osteology and Syndesmology..	3	Embryology	3
Chemistry	3	Chemistry	3
Physics	3	Physics	3

Second Year.

First semester :		Second semester :	
Physiology	6	Physiology	6
Pathol. Anatomy.....	3	Pathol. Anatomy.....	3
Surgical Anatomy.....	3	Regional Anatomy.....	3
Toxicology	3	Materia Medica.....	3

Third Year.

First semester :		Second semester :	
Practice of Medicine.....	3	Practice of Medicine.....	3
Bacteriology	3	Bacteriology	3
Clinical Pathology.....	3	Hygiene	3
Principles of Surgery.....	3	Obstetrics	3
Therapeutics	3	Diseases of Eye and Ear (1)..	3

Fourth Year.

First semester :		Second semester :	
Clinical Medicine.....	3	Clinical Medicine.....	3
Clinical Surgery.....	3	Clinical Surgery.....	3
Obstetrics	3	Gynecology	3
Children's Diseases.....	3	Electro-Therapeutics	3
Dermatology (1).....	3		

(1) Diseases of Eye and Ear, and Dermatology will not be taught in the next two years (1899-1900 and 1900-1901).

The figures indicate the number of hours a week in the lecture room. Two and a half hours in the laboratory are reckoned as only one hour in the lecture room.

PLAN OF INSTRUCTION.

Instruction is given by lectures, recitations, clinical teaching, and laboratory work.

The length of the session, nine months, renders it practicable to distribute the different branches among the teachers in a satisfactory manner, and in their natural order and succession. The student is thoroughly drilled each day by examinations upon the lectures of the previous day, and by recitations from text-books.

By this method of teaching, it is believed that the process of cramming—a deleterious practice, too prevalent in the general system of medical education—is avoided; and much will be done to elevate the standard of medical education, and to exalt the dignity of the profession.

The students are taught the use of the microscope, in both pathological and physiological studies. The methods of bacteriological, physiological, and histological investigation are taught by practical work in the laboratories.

With the consent of their Dean, medical students may take, without additional fee, any work offered in the Academic Department and in the Schools of Agriculture and Mechanic Arts; but the total number of hours shall not exceed 18 a week, and such work shall not count toward the degree of M. D., unless it is included in the regular Medical course. Academic students, on the other hand, may take Anatomy and Physiology and Bacteriology in the Medical course, preparatory to entering on the full Medical course after graduating in Arts or Science. See page 43.

LABORATORIES.

The following courses are required:

Chemistry.

1. Elementary Inorganic Chemistry. Lectures. *T.*; Laboratory, two hours, at 1:30. (First Year.)
- 4a. Toxicology. First semester, three hours a week. (Third Year.)

Physics:

2. Physics. Lectures and recitations. First semester, *M. F.*, at 11:30. Laboratory, *W.*, at 1:30. Second semester, *M.*, at 11:30. Laboratory, *W. F.*, at 1:30.

Text: Daniell's Physics for Medical Students.

- 7b. The Practical Application of Electricity in Medicine and Surgery. Second semester, *T. Th. S.*, at 9:30. (Fourth Year.)

Text: Liebig and Rohe.

Biology:

1. Microscopic Anatomy of Vertebrates. Lectures and Laboratory.
Three hours a week through the year. (First Year.)
- 2b. Comparative Embryology of Vertebrates. Lectures, *one hour a week*;
Laboratory, *two hours a week.* (First Year.)
Minot's Human Embryology, Marshall's Vertebrate Embryology.
3. Comparative Neurology of Vertebrates. Lectures and Laboratory.
(Elective.)

Courses 1 and 2b are required for admission to this course.
Texts: Edinger's Anatomy of the Central Nervous System, and Obersteiner's Central Nervous System.

Physiology:

Lectures and Laboratory. *Six times a week throughout the year.*
(Second Year.)

The courses in Anatomy, Histology, Physics, and Chemistry given in the first year of Medicine are prerequisite for admission to this course.

The topics considered are:

- (a) The Blood, Circulation, Muscle and Nerve, Digestion, Respiration, Excretion, etc. *First semester, six times a week.*
- (b) Metabolism, Nutrition, Nervous System, Reproduction. *Second semester, five times a week.*
- (c) The Physiological Action of Medicines (Laboratory). *Second semester, once a week.*

Text: Foster's Physiology; Collateral reading—Landolt, Waller, American Text-Book, Neumeister, Bunge, Brunton, etc. Laboratory Manual—Stirling's Practical Physiology.

Laboratory and Equipment.—The lecture and laboratory rooms are on the third floor of the Agricultural Building.

The laboratory is supplied with glassware, chemicals, microscopes, a microtome, and a fair equipment of apparatus for graphic and other work, as induction coils, batteries and keys, rheocord, moist chamber, kymographs, student's drums, pendulum myograph, manometers, Marey's tambours, sphygmograph, cardiograph, stethograph, electric time-markers, rheonome haemacytometer, haemometer, micrometers, artificial eye, phakoscope, perimeter, stromuhr, oncometer, electrometer, saccharimeter, spectroscope, ureometer, etc.

Pathology:

- 1a. General Pathology. Lectures two hours, laboratory one hour. *First semester.* (Second Year.)

This course consists of lectures and recitations on general questions in Pathology, which are illustrated with macroscopic preparations and with microscopic specimens hardened or fresh. Part of the laboratory hours will be devoted to the performance of post-mortems. Text-book: Ziegler's General Pathological Anatomy.

- 1b. Special Pathology. Lecture one hour, laboratory two hours. *Second semester.* (Second Year.)

Lectures and recitations on the most important pathological changes found in the different organs of the body. The laboratory hours are devoted to the macroscopical and microscopical study of these changes. Part of the laboratory hours will be devoted to the performance of post-mortems.

- 2a. Clinical Pathology. Lectures two hours, laboratory one hour. *First semester.* (Third Year.)

Lectures and recitations on animal parasites and the pathological changes of the liquids and secreta of the body. In the laboratory hours the student is instructed in the microscopic examination of blood, milk, urine, sputum, pus, secreta of nose, mouth, and trachea, contents of stomach and intestines, scrapings, etc.

Bacteriology:

- 1a. Lectures two hours, laboratory one hour. *First semester.* (Third Year.)

- 1b. Lecture one hour, laboratory two hours. *Second semester.* (Third Year.)

The lectures introduce the student into general questions in Bacteriology—the nature and development of bacteria, the history of bacteriology, sterilization and disinfection, immunity and disposition, etc.

In the laboratory hours the students are instructed in the preparation of culture-media and in the methods of obtaining pure cultures, and in the different staining methods. They study some saprophytic and the most important parasitic bacteria in pure cultures on the different media and the microscopic preparations. Special attention is given to all practical points, the bacteriological diagnosis of cases of infectious diseases, and the bacteriological examination of water, air, and soil.

Hygiene: Lectures. Second semester, three hours a week.

(Third Year.)

Lectures with demonstrations and recitations on the following questions:

History of Hygiene, hygienic conditions of air and soil with special reference to the influence of climate (acclimatisation) and subsoil water upon diseases, hygiene of cities, dwellings, schools, prisons, etc., hygiene of skin, dressing, nutrition, hygiene of childhood, prisoners, etc., commercial hygiene; ways in which different important diseases, such as Malaria, Cholera, Typhoid, Diphtheria, Tuberculosis, etc., spread, and the means of preventing epidemics; Vaccination against Smallpox and Hydrophobia; Disinfection; Quarantine; Organization of boards of health in different countries, etc.

Anatomy:

Facilities are afforded the students for the thorough study of Anatomy. Provision is made for a supply of subjects amply sufficient for the number of students. The dissecting rooms, large and well ventilated, are open during the whole winter season, where, under the guidance of a demonstrator, the student, by dissecting, acquires a practical knowledge of the human body in all parts.

The Physiological laboratories are in the Hall of Agriculture, the Bacteriological and Pathological laboratories are in the Chemistry building. The Professors of Surgery, Obstetrics, and Practice of Medicine, have rooms on the first floor of the Academic Hall. The old medical building is now the Anatomical Hall.

Clinics:

The number and variety of Medical and Surgical Clinics are ample for purposes of instruction.

DEGREES.

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred. The degree of "*M. D. cum laude*" is given to all graduates in the Medical course who have the Academic degree of A. B., B. S. or B. L.

REQUIREMENTS FOR GRADUATION.

1. The candidate must have completed the course prescribed and passed a satisfactory examination thereon.

2. He must be twenty-one years of age, and must exhibit evidence satisfactory to the Faculty of possessing a good moral character.

3. His last course of lectures must have been attended in this Department.

4. He must have been regular in attendance upon lectures and recitations and in laboratories.

5. Every candidate must appear before the members of the Faculty for examination in the various branches in the course, at the time appointed for such examinations.

6. Conformity to the general laws established by the Curators and the Faculty for the government of the University, faithful discharge of duties, and regular attendance upon lectures and laboratories, are required of all students.

For tuition charges, fees, etc., see "Expenses," pages 44-45.

For further information, address

A. W. MCALESTER, M. D.,
Dean of Medical Faculty.

For catalogues, address

IRVIN SWITZLER,
Secretary Medical Faculty.

VI. Department of Military Science and Tactics.

ABRAHAM PERRY BUFFINGTON,* Captain U. S. Infantry,

Professor of Military Science and Tactics, and Commandant of Cadets.

WILLIAM HENRY TURNER, B. S.,

Instructor in Military Science and Tactics, and Acting Commandant of Cadets.

Requirements for Admission:

No cadet will be received who is under 16 or over 25 years of age, or who is less than five feet one inch in height, or who is in any way physically disqualified for military service.

All male students of the University not physically disqualified, who come within the limits of age and height, will be allowed to enroll themselves as voluntary cadets, but only State cadets will be provided with the tailor-made uniform without expense to themselves. Volunteers can buy a complete uniform for about \$12.50. A copy of the regulations for the government of the cadets is given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the Commandant for duty *before* September 25 of each year. They should report by September 12, if possible. Vacancies may be filled at the discretion of the Senators or Representatives.

Battalion Staff and Non-commissioned Staff.

Cadet Officers:

Cadet Major and Acting Commandant.....	W. H. Turner
Cadet Major.....	R. S. Edmonds
Cadet First Lieutenant and Adjutant.....	W. H. Seward
Cadet First Lieutenant and Quartermaster.....	J. L. Anderson
Cadet Sergeant Major.....	G. G. Robertson
Cadet Quartermaster Sergeant.....	E. F. Camron

Company A.

Cadet Captain.....	O. H. Turner
Cadet First Lieutenant.....	J. N. Wilson
Cadet Second Lieutenant.....	L. Utley
Cadet First Sergeant.....	W. F. Switzler, Jr.

*Absent during session of 1898-1899.

Company B.

Cadet Captain.....	A. U. Brandt
Cadet First Lieutenant.....	C. L. Parkhurst
Cadet Second Lieutenant.....	C. S. Ruffner
Cadet First Sergeant.....	A. Bassett

Company C.

Cadet Captain.....	M. F. Highley
Cadet First Lieutenant.....	A. McReynolds
Cadet Second Lieutenant.....	W. Halliburton
Cadet First Sergeant.....	C. A. Barnes

Artillery.

Cadet Captain.....	J. C. Edwards
Cadet Second Lieutenant.....	R. H. Pinkley
Cadet First Sergeant.....	L. Lewis

Band.

Band Leader.....	F. Pannell (civilian)
Drum Major.....	R. W. Robinson

Those cadets are appointed to office who show ready obedience, zeal, and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

Equipment and Supplies:

Two hundred and ten Springfield cadet rifles of the latest model; one Gatling gun, cal. 45, with full equipment; two 3-inch rifled field guns, with carriages and implements; twenty-five sabres; and a suitable amount of ammunition and target materials, are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc. The University supplies instruments and instruction for the band.

Prizes:

The Curators have provided an elegant silver cup to be awarded each year to the best drilled company.

A gold medal is sometimes given to the best drilled private and a target medal to the best marksman.

Uniforms:

Cadets wear but one style of uniform, known as the undress or fatigue uniform. Uniforms must be worn at all military exercises, and may, with permission of commandant, be worn on special occasions.

Tailor-made uniforms are supplied to volunteer cadets at a contract price. The State furnishes uniforms to regularly appointed cadets free of cost (usually one entire uniform and one extra pair of trousers every year to each appointed cadet, depending upon amount of appropriation by Legislature).

COURSE OF INSTRUCTION.

FIRST YEAR.

Practical instruction in the Schools of the Soldier, Company, and Battalion (Infantry), and Extended Order.

Practical instruction in rifle-firing, 100, 200, 300, and 400 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of guard mounting, dress parade, inspection, review, muster and extended order.

Recitations in guard duty and cadet regulations.

SECOND YEAR.

Practical instruction in the Schools of the Company and Battalion, and in Extended Order.

Practical instruction in the service of field-guns (foot battery), with mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200, 300, and 400 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations, School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted, etc.

Recitations in Notes on Military Science:

Lectures are given on Army Organization, the Army of the United States, Army Regulations, Courts Martial and Military Law, the Customs of War, Security and Information (including outposts, advance and rear guards, patrols, reconnoissances, orientation and map reading), Guard Duty, Castrametation, Field Service, Field Fortifications, Rifle Firing, and Target Practice.

Certificate of Proficiency:

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in Military Science and Tactics, but it is the rule now adopted in the University that the certificate will be issued

to every cadet, State or volunteer, who takes the entire course and attains a grade of at least 70 per cent in *every examination* given during the two years in Military Science and Tactics.

Appointment of State Cadets:

The following extracts from the Militia law of the State of Missouri, enacted by the Thirty-eighth General Assembly, revised by the Thirty-ninth General Assembly, and now in force, will be of interest to those who desire to receive appointments as cadets:

"Be it enacted by the General Assembly of the State of Missouri, as follows:

"SECTION 1. The Military Department of the University of the State of Missouri as organized under section 1225, Revised Statutes of the United States, and section 8741, Revised Statutes of Missouri, 1889, is created the Missouri State Military School.

"SECTION 2. The corps of cadets of the Missouri State Military School shall consist of appointees of Senators and Representatives, and such students as may voluntarily enter such school. All appointments under this section shall be for the term of two years. Each Senator and Representative of the General Assembly of Missouri shall have the power to appoint a cadet from his district by the first day of August of each year: Provided, that if there shall be no application for such cadetship in any district by the first day of August, in any such year, then such appointment may be made from any other district in this State; and provided, that in case of death, resignation or expulsion from the University of any cadet from such district, the Senator or Representative thereof may fill such vacancy at any time. All appointees under this section shall pass the required examination for admission to the University.

"SECTION 3. Cadets receiving instructions, as provided in preceding section, shall be matriculated in all Academic departments, and in the College of Agriculture and Mechanic Arts of the University, free from tuition and other fees.

"SECTION 4. The corps of cadets, as provided in the preceding sections, shall have the military organization prescribed for the National Guard of the State and be reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri.

"SECTION 5. The military government and discipline of the cadets shall be prescribed by regulations prepared by the Faculty of the University and approved by the Governor of the State. The officers of the corps of cadets shall be appointed and commissioned by the Governor of the State, upon the recommendation of the Faculty of the University, and shall have the powers conferred by said regulations.

"SECTION 6. Cadets shall be individually responsible for all State property issued directly to them, and shall constitute a guard for the safe-keeping and preservation of all University property."

Regulations:

Cadet regulations prescribe that military drills, etc., shall be held at least three hours a week, one of which shall be for theoretical and two for practical instruction. The regulations require also, whenever the means of the University permit it, an annual encampment of from eight to ten days, during which the instruction is entirely military and practical. Here the cadets are instructed in all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300, and 400 yards, perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed by the two years' course. The expenses of the encampment are borne by the University.

Enrollment:

During the present session 239 cadets have received instruction in Military Science and Tactics.

State Commissions:

Senate Bill No. 66, 39th General Assembly, provides as follows:

"Article III. Section 33. Every graduate of any college in the State of Missouri, in which military instruction is regularly given by an officer of the United States Army, detailed for that purpose, who shall have received military instruction during a course of four years, shall be entitled to a commission as brevet second lieutenant of the National Guard of Missouri, subject to such physical examination as to ability as the commander-in-chief may from time to time prescribe: Provided, that application for such commission be made within one year after graduation from such college, and that such applicant shall be at the time a citizen of the State of Missouri."

VII. College of Agriculture and Mechanic Arts.

FACULTY.

Except those of the President and the Dean, names are printed in order of appointment.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D., LL. D.,
Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, Director of the Observatory, and Assistant Professor of Mathematics.

CHRISTIAN WILLIAM MARX, B. E.,
Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Veterinary Surgery.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of History and Political Economy.

JOHN PICKARD, A. M., Ph. D.,
Lecturer on Ancient Architecture.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLACKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor (in charge) of Electrical Engineering.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Assistant Professor (in charge) of Geology and Mineralogy.

*ABRAHAM PERRY BUFFINGTON (Captain, U. S. Army),
Professor of Military Science and Tactics.

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

**T. E. WHITE, D. V. S.,
State Veterinarian, and Lecturer on Veterinary Surgery.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

CHARLES THOM, A. B., A. M.,
Instructor in Biology.

WILLIAM HENRY TURNER, B. S.,
Instructor in Military Science and Tactics, and Acting Commandant of Cadets.

***A. E. HACKETT,
Lecturer on Climatology.

*Absent during the session of 1898-9.

**In the service of the State Board of Agriculture.

***In the service of the U. S. Government.

FELLOWS.*

ROYALL HILL SWITZLER, A. B.,
Fellow in Mathematics.

CLARENCE MARTIN JACKSON, B. S.,
Fellow in Biology.

BERT MUNDAY, M. S.,
Fellow in Physiology.

HENRY HERRENLEBEN, B. L.,
Fellow in Germanic Languages.

JOHN LAWRENCE GERIG, A. B.,
Fellow in Romance Languages.

THOMAS ELMER MCGAUGH, A. M.,
Fellow in Pathology and Bacteriology.

*Fellows are elected for one year and are required to teach five or six hours a week.

Historical Statement:

This College had its origin in the beneficence of National, State, and local governments. Its location, objects, and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

"Its leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." (Act of Congress, 1862, Sec. 4.)

"There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct Department of the University of the State of Missouri." (R. S. of Missouri, Sec. 8738.)

"To effect the said leading objects of the College, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets, and apparatus, and to all lectures and instruction of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as the students of any other Department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established

by Congress, the State University is hereby required by law to make the necessary provision for carrying out the plan so established in connection with the institution." (R. S., Sec. 8741, p. 2017.)

"The Agricultural and Mechanical College, and the School of Mines and Metallurgy herein provided for, shall have each a separate and distinct Faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other Colleges and Departments of the University." (R. S. of Missouri, Sec. 8742.)

"In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University the county of Boone shall donate not less than \$30,000 in cash, to be used in erecting such buildings and making such improvements as may be needed for such College, and also for a Mechanical College in connection with the State University, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College." (R. S. of Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of \$90,000 for the erection of a building and the purchase of lands for an experiment farm, and this College was permanently located at Columbia as a Department of the University, and the School of Mines and Metallurgy was located at Rolla, in Phelps county. The latter is under the same general control as the College of Agriculture and Mechanic Arts.

Endowment of the College:

The support of the College is derived from—

1. The proceeds of the sales of the public lands donated to Missouri by the act of Congress of July 2, 1862. The State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and thirty thousand nine hundred and three acres, yielding three hundred and fifty thousand dollars. This sum is invested in State certificates of indebtedness, at 5 per cent, and yields seventeen thousand five hundred dollars. Of this amount one-fourth is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The act of Congress of March 2, 1887, known as the "Hatch Bill," which appropriates \$15,000 annually to the College of Agriculture for the maintenance of an Experiment Station. The object of this Station is to conduct experiments in various lines of work connected with agriculture. By the acts of Congress making the above appropriations, the expenditures are expressly restricted for the purpose of original scientific investigations in Agriculture.

- 3 The annual appropriations are yearly to be increased under act of Congress of August 30, 1890 (Morrill bill). The first appropriation of \$15,000, for the years of 1889-90, is increased each year \$1,000, and this is to continue until it reaches \$25,000, which shall remain an annual appropriation. Of this amount about one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in agriculture and mechanic arts, and one-fourth of the remainder is by order of the Board of Curators given to the School of Mines and Metallurgy, at Rolla. The College Farm itself cost originally \$60,000.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and scientific investigation.

The College is divided into three schools, with a fourth department, the Experiment Station, as follows:

- A.—The School of Agriculture.
- B.—The Experiment Station.
- C.—The School of Mechanic Arts.
- D.—The School of Engineering.

SCHOOLS OF AGRICULTURE AND MECHANIC ARTS.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of the Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D., LL. D.,
Professor of Agricultural Chemistry.

CHRISTIAN WILLIAM MARX, B. E.,
Superintendent of Mechanic Arts.

JOHN CHARLES WHITTEN, B. S.,
Professor of Horticulture.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Veterinary Science.

FREDERICK BLACKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

***T. E. WHITE, D. V. S.,**
State Veterinarian, and Lecturer on Veterinary Surgery.

*In service of the State Board of Agriculture.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of Political Economy.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology, and Curator of the Biological Museum.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

ISIDOR LOEB, M. S., LL. B.,
Assistant Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Assistant Professor (in charge) of Geology and Mineralogy.

*ABRAHAM PERRY BUFFINGTON (Captain, U. S. Army),
Professor of Military Science and Tactics.

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

*Absent during session of 1898-9.

ELLIOTT JEFFRIES MASON, B. S.,

Instructor in Mechanic Arts.

CHARLES THOM, A. B., A. M.,

Instructor in Biology.

WILLIAM HENRY TURNER, B. S.,

Instructor in Military Science and Tactics, and Acting Commandant of Cadets.

**E. A. HACKETT,

Lecturer on Climatology.

FELLOWS.***

ROYALL HILL SWITZLER, A. B.,

Fellow in Mathematics.

BERT MUNDAY, M. S.,

Fellow in Physiology.

THOMAS ELMER McGAUGH, A. M.,

Fellow in Pathology and Bacteriology.

CLARENCE MARTIN JACKSON, B. S.,

Fellow in Biology.

HENRY HERRENLEBEN, B. L.,

Fellow in Germanic Languages.

JOHN LAWRENCE GERIG, A. B.,

Fellow in Romance Languages.

**In the service of the U. S. Government.

***Fellows are elected for one year and are required to teach five or six hours a week.

Requirements for Admission:

Applicants for admission to the Freshman class must be not less than sixteen years of age, and must have completed the "public school" course of the State. They must submit to the "Committee on Entrance by Diploma" satisfactory evidence of having completed this course; or in lieu of such evidence must pass satisfactory examinations in writing on each of the following subjects: English, Arithmetic, Geography (Descriptive and Political), and History of the United States. The examination will cover the ground embraced in the text-books adopted by the State for the common schools. As a part of the English examination, the applicant will be expected to write a composition of not less than two hundred words.

Applicants for admission to advanced classes must furthermore pass examinations in all the studies previously pursued by the class which they propose to enter. If they have pursued such studies in any of the High Schools of the State approved by the Faculty, or in any other institutions

of similar rank, they may receive credit therefor upon presenting to the "Committee on Entrance by Diploma" a certificate from the proper officers of such institutions.

For the dates of examinations for admission, see the calendar, p. III, and page 25. For board and other expenses, see pages 44 and 58.

COURSES OF INSTRUCTION.

I. A TWELVE WEEKS' WINTER COURSE IN AGRICULTURE AND DAIRYING.

This course is designed to meet the wants of a large number of young men who can not afford the time or the money necessary for a regular college course in agriculture, and yet desire a better preparation for their life work than can be acquired on the farm.

To suit the convenience of farmers the course is given in the winter. It is open to all over sixteen years of age, and no entrance examination or special preparation is required. Any intelligent person with a common school education will be able to pursue this course with profit. An entrance fee of \$5 covers all college expenses.

It is the aim to give the student the largest amount of thoroughly practical information about farming, dairying, gardening, fruit-growing, veterinary science, carpentry, and blacksmithing, possible in twelve weeks, and, at the same time, instruct him in the elements of chemistry, geology, entomology, and botany as applied to agriculture and horticulture.

The instruction is imparted by means of lectures, and practical illustrations on the farm, in the barn, in the greenhouse, the laboratories, and the machine shops of the College.

The course consists of 229 lectures and exercises, divided as follows: Agriculture, 75; Horticulture, 40; Dairying, 20; Agricultural Chemistry, 30; Economic Entomology, 10; Veterinary Science, 24; Carpentry and Blacksmithing, ten exercises of two and one half hours each; Book-keeping and Farm Accounts, six exercises of two and one half hours each; Butter and Cheese-making, 14 exercises of two and one half hours each.

II. SHORT WINTER COURSE IN HORTICULTURE.

With a view to aiding in the development of the Horticultural interests of the State by the dissemination of correct information concerning the best modern methods in the management of nurseries and orchards and in the growing of small fruits, flowers, and vegetables on a commer-

cial scale, and by instruction in the application of the sciences underlying these arts, a short winter course in Horticulture, parallel with the short course in Agriculture, is offered. This course is open to all persons over sixteen years of age, and no entrance examination is required. An entrance fee of \$5 covers all college charges.

The course consists of 267 lectures and exercises, as follows: Horticulture, 108 (including Nursery Work, 24 lectures and 12 afternoons at practice in the nursery and grafting shops: Orchardng and Small Fruit Growing, 24 lectures and 12 afternoons in the orchards and vineyards: Market Gardening, 24 lectures and 12 afternoons spent in propagating vegetables, etc); Landscape Gardening, 10 lectures; Fungous Diseases and Fungicides, 20 lectures; Entomology, 60 lectures; Botany, 16 lectures; Manures, 10 lectures; Drainage, 5 lectures; Sanitary Science, 10 lectures; Book-keeping, 6 exercises of two and one half hours each; Carpentry and Blacksmithing, 18 exercises of two and one half hours each; Steam Heating and Steam Fitting, 4 lectures.

The special lecturers in this course were Hon. N. F. Murray, President State Horticultural Society, Oregon, Mo., 24 lectures and 24 practical exercises on Nursery Work; Hon. L. A. Goodman, Secretary State Horticultural Society, Westport, Missouri, 24 lectures and 24 practical exercises on Orchardng and Small Fruit Growing.

These short winter courses, beginning Tuesday, January 2, 1900, will be continued dally, except Sunday, until March 26, 1900. Full details will be given in a special circular, which will be ready for distribution in September, 1899, and will be sent free to all applicants.

III. A TWO YEARS' COURSE.

The course embraces the first two years of the regular Four Years' Course, and aims to give the student the most comprehensive knowledge of the laws underlying the best modern practice in Agriculture, Horticulture, etc., as well as to develop the highest skill in Mechanical Drawing, Carpentry, and Blacksmithing, that is possible in that time.

In addition to the mental discipline afforded by a study of these useful arts and sciences, the student is instructed in English, Mathematics, etc., with a view to broadening his mind and better fitting him for his duties as a citizen.

It is the purpose of the course to educate the student back to the farm instead of away from it, and to give him such knowledge as will be most useful in the practice of his profession.

The requirements for admission are the same as for the Four Years Course.

Students completing this course will be granted a certificate.

IV. A FOUR YEARS' COURSE.

This course, a continuation of the Two Years' Course, is more scientific, but not less practical.

It has been recast in order to adapt it as far as possible to present requirements in both science and practice. Its object is to give young men a thorough education at the same time that they are carefully instructed in the relations that the sciences bear to the various branches of agriculture; to give the mental training that is indispensable to success and to the discharge of the highest duties of citizenship; and also the scientific and technical training and knowledge requisite for becoming efficient workers in agricultural affairs, whether as practical farmers, teachers, or investigators. It aims to impart a thorough and comprehensive knowledge of the principles underlying the business of farming according to modern methods. Practice is combined with theory, whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations. Increased teaching force and equipment have been provided for the work, and the opportunities offered young men were never so satisfactory as at the present time.

Students completing this course will be entitled to a diploma, conferring upon them the degree of Bachelor of Agriculture (B. Agr.).

Elective Work: On reaching the third year students may elect work as provided in the scheme of studies in any of the following subjects: Agriculture, Horticulture, Entomology, Veterinary Science, and Agricultural Chemistry. The subject elected by students in the third year will be considered a major and must be pursued through the fourth year. In addition the student may in the fourth year elect not more than three hours in the following subjects: Dairying, Biology, Chemistry, English, French, German, and Botany.

Thesis:

As a requisite for graduation, each candidate must present an acceptable thesis, based on the results of original research. The subject must be announced to the Dean with the approval of the head of the department within which it lies not later than the beginning of the second semester of the Senior year. The completed thesis must be submitted not later than the second Saturday before Commencement day.

SCHEME OF STUDIES.

TWO YEAR AND FOUR YEAR COURSES.

First Year.

First Semester.		Second Semester.	
8:30. Mathematics, T. Th. S...	3	8:30. Mathematics, M. T. W.	
9:30. Agriculture, T. Th. S....	3	Th. F. S.....	6
9:30. English, M. W. F.....	3	9:30. Agriculture, T. Th. S....	3
10:30 to 12:30. Shop Work, T.		9:30. English, M. W. F.....	3
Th. S.....	3	10:30 to 12:30. Shop Work, T.	
10:30 to 12:30. Commercial, M.		Th. S.....	3
W. F.....	3	11:30. Physics, M.....	1
11:30. Physics, M.....	1	1:30. *Lab. Physics, W. S.....	2
1:30. *Lab. Physics, W. S.....	2	4:00. Military (optional).	
4:00. Military (optional).			

Second Year.

First Semester.		Second Semester.	
8:30. Agriculture, M. W. F....	3	8:30. Horticulture, M. W.....	2
9:30. English, T. Th. S.....	3	8:30 to 10:30. Horticultural	
9:30. Chemistry, W.....	1	Lab., F.....	1
10:30. Mathematics, M. T. W.		9:30. English, T. Th. S.....	3
Th. F. S.....	6	9:30. Chemistry, W.....	1
1:30. *Chemical Lab., T. W... 2		10:30. Algebra, T. Th. S.....	3
1:30. *Drawing, M. Th. S.... 3		1:30. *Chemical Lab., T. W... 2	
4:00. Military (optional).		1:30. *Drawing, M. Th. S.... 3	
		4:00. Military (optional).	

Third Year.

First Semester.		Second Semester.	
8:30. Horticulture, T. Th. S... 3		8:30. Forestry, T. Th..... 2	
9:30. Agricultural Chemistry,		8:30. Animal Phys., M. W. F.. 3	
T. Th. S..... 3		9:30. Agricultural Chemistry,	
10:30. Vegetable Physiology, T.		T. Th. S..... 3	
Th. S..... 3		9:30. Entomology, M. W. F.... 3	
1:30. *Lab. Physics, M. W. F... 3		10:30. Vegetable Physiology, T.	
Elective 3		Th. S..... 3	
		10:30. Systematic Bot., M. W. F. 3	

Fourth Year.

First Semester.		Second Semester.	
8:30. Agriculture, T. Th. S.... 3		8:30. Agriculture, T. Th. S.... 3	
8:30. Vet. Science, M. W. F... 3		8:30. Veterinary Science, W. F. 2	
9:30. Bacteriology, T. W. Th... 3		9:30. Landscape Gardening.	
9:30. Climatology, F..... 1		M. W..... 2	
11:30. Economics, M. W. F.... 3		10:30. Geology, T. W. F..... 3	
1:30. *Veterinary Clinics..... 1		11:30. Economics, M. W. F.... 3	
Elective 2		1:30. *Veterinary Clinics..... 1	
		Elective 3	

In the case of all the subjects starred [*] in the above table, no preparation is required, hence two and one half times the number of hours given above in these subjects are spent in the Shop, in the Drawing and Commercial rooms, and in all Laboratory work.

Degree of Bachelor of Science in Agriculture:

The degree of Bachelor of Science in Agriculture will be given to students holding the degree of Bachelor of Agriculture on the completion of one additional year's work. Candidates for this degree must pursue successfully a minimum of fifteen hours' work a week through one year and are required to take three hours throughout the year in three of the following subjects: Biology, Physics, Chemistry, Geology. In addition a student must elect three hours in one of the following subjects: Agriculture, Horticulture, Entomology, or Veterinary Science.

Agriculture.

Professor MUMFORD.

The instruction in this department is thoroughly practical, and is intended to give a knowledge of the application of the natural sciences to the complex operations of agriculture. Lectures and recitations are supplemented by practical demonstrations on the farm. In the class room the student becomes familiar with the best rations, and in the barn feeds the rations, and determines their practical value. The student in dairying goes through the whole process of making butter, repeating the work until he becomes familiar with it. The study of live stock is based upon an examination of a large number of animals, so that the student begins the subject with a knowledge of the best types for various purposes.

1a. The Soil. *First semester, T. Th. S., at 9:30.* Professor MUMFORD.

(First Year.)

A study of the origin, formation, distribution, and classification of soils with reference to their agricultural value; the conditions of fertility and the circumstances that influence it; indications of fertility; barren and exhausted soils; improvement of soils; physical properties of soils, including their relations to air, water and heat; capillarity, diffusion, and solution, as related to soil texture; farm drainage, including methods of construction, irrigation, tillage, plowing, subsoiling, harrowing, etc.

1b. Fertilizers. *Second semester, T. Th. S., at 9:30.* Professor MUMFORD.

(First Year.)

Constituents of Plants; sources and specific action of the various elements of plant food; crops and materials used as fertilizers; methods of farming in relation to the conservation of fertility.

Farm Crops.—Plant breeding; variation, selection, self and cross fertilization; practical methods for increasing the yield of crops; conditions of germination and plant growth; rotation of

crops; planting, growing, harvesting and storing crops. The results of experiments at the Station are used in discussing the best methods of culture. The Missouri Experiment Station offers excellent opportunities for the illustration of this work.

- 2a. Animal Husbandry. *First semester, M. W. F., at 8:30. Professor MUMFORD.* (Second Year.)

This work begins with a careful study of the types of domestic animals. The score card is the basis in judging beef and dairy cattle, draft and light horses, mutton and wool sheep, swine and poultry. After the student has become familiar with the most approved types, he studies the principles and methods of successful breeding, such as heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading influence of a previous impregnation, etc.

- 3a. Agricultural Engineering. *First semester, T. Th. S., at 8:30. Professor MUMFORD.* (Fourth Year.)

Construction of barns, stables, and other shelters; plans for building silos, fences, etc. Road building is considered with special reference to country roads. Some attention is given to the mechanics of farm implements and machines. For this purpose a new self-registering dynamometer has been provided. There is also a model of a horse arranged for determining by experiments the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc.; and also an appliance for measuring the resistance to tractive force of incline and obstruction.

- 3b. Stock Feeding. *Second semester, T. Th. S., at 8:30. Professor MUMFORD.* (Fourth Year.)

The laws of animal nutrition; composition of the animal body; fodders, the source of nutrients; digestion, resorption, circulation; respiration and excretion; formation of muscle, flesh, and fat; composition and digestibility as determining the value of feeding stuffs; their preparation and use; feeding for fat, for milk, for wool, for work, and for growth. A portion of the time is devoted to practicums, in which the student is required to compound rations and feed them, carefully, recording results.

- 4b. Agriculture. *Second semester. Dean WATERS.*

(Short Winter Course.)

Twenty-five lectures on manures and their application; on stock feeding; composition and digestibility of fodders; steaming, cooking and grinding foods; and feeding for growth, fat, milk, wool or labor. (See special circular of Short Winter Course.)

- 5b. Agriculture. *Second semester. Professor MUMFORD.*

(Short Winter Course.)

Sixty lectures on farm equipment; the properties and uses of construction materials; building barns, stables, shelters, silos, and other farm structures; farm crops, tillage rotation, cultivation, harvesting, and storing; breeds and breeding; stock judging; scoring animals to determine best types for beef, milk, mutton, wool, etc. This work is all performed at the farm barns, and students acquire considerable proficiency in judging stock. (See special circular of Short Winter Course.)

6b. Dairying. *Second semester.* Mr. _____.

(Short Winter Course.)

Selection, breeding, and feeding of dairy cows; modern methods of butter and cheese-making. Fifty hours of practical work in the dairy building are devoted to separating and testing milk, ripening cream, churning, working, salting, coloring, and packing butter for market. (See special circular of Short Winter Course.)

7a. Judging Live Stock. *First semester.* Professor MUMFORD.

(Elective.)

Advanced work with the score card, and a study of breed characteristics. The college farm, well equipped with typical specimens of the leading breeds of live stock, offers excellent opportunities for this work.

8b. Soils. *Second semester.* Professor MUMFORD.

(Elective.)

Laboratory work in Soil Physics, chiefly the Mechanical Analysis of soils. Offered only to Juniors and Seniors.

9b. Experiments in Agriculture. *Second semester.* Professor MUMFORD.

(Elective.)

The work consists of lectures on methods of Experiment Station work and critical studies of bulletins. The student is required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. He is also required to plan and conduct an original experiment, using the results obtained as the basis for a thesis.

10b. Dairying. *Second semester.* Professor MUMFORD.

(Elective.)

Breeding and improvement of the herd; management and equipment of the farm dairy. One half of the student's time is devoted to practical work in the College dairy, which is fully equipped.

Courses 1a, 1b, and 2a are required for the certificate in Agriculture.

Courses 1a, 1b, 2a, 3a, and 3b are required for B. Agr.

Courses 4b, 5b, and 6b are required for students in Short Winter Course.

Facilities for Instruction:

Libraries.—The Agricultural Library contains more than 600 bound volumes and 5,000 pamphlets. One of the most valuable features of this library is a complete file of the publications of every Experiment Station in the United States, systematically arranged, and fully indexed. Files of the leading agricultural papers are accessible in the reading room. The general library of the University contains many volumes of great interest to students in agriculture.

The Agricultural Museum.—The value of a museum is mainly in furnishing illustrative material for study, and to this purpose the Agricultural Museum is well adapted. It contains a collection of wool fibers illustrating the influence of breeding and environment; a large assortment of cotton fibers and of fiber plants from various countries; and a systematic collection of the agricultural grasses of the United States. The forest woods of the State are represented by block specimens showing cross and transverse sections and bark characteristics, and by a collection of polished boards. Several hundred models of early patents of farm machines occupy a considerable portion of the museum. In live stock there are skeletons of a horse, and hog, and two stuffed specimens of the wild white cattle of Great Britain.

The Farm.—The farm is fully equipped with improved agricultural machinery, a dairy building, hay and stock scales, a silo, sheep, cattle, and horse barns, and model swine pens. The farm and its equipment is used primarily for the instruction of students.

Live Stock, Dairy and Veterinary Building.—The last General Assembly appropriated \$30,000 for a Live Stock, Dairy and Veterinary Building on the College Farm, which will provide suitable laboratories and equipment for the work in judging and scoring live stock, in the manufacture of butter and cheese and the testing of milk, and for conducting the Veterinary clinics. It is expected that this building will be completed and ready for use this year.

The Live Stock.—For the instruction of students in animal husbandry, the farm maintains typical specimens of the leading breeds of live stock. Among the breeds of cattle are a fine herd of Jerseys, and excellent specimens of Short-horns, Aberdeen Angus, and Herefords. A herd of grade steers are fattened each season. There are specimens of the leading breeds of sheep and swine, together with grade animals.

The Dairy.—The College has equipped a dairy with several Babcock milk testers, aerators, improved milk and cream vats, various styles of

separators, churns and butter workers, and with a complete sterilizing outfit for pasteurizing milk and cream on a large scale.

The Experiment Station Field.—The field experiments of the Missouri Experiment Station offer exceptional opportunities for the study of comparative methods of cultivating and growing farm crops.

Horticulture.

Professor WHITTEN.

The following courses are offered:

- 1b. Horticultural methods. Lectures. *Second semester, M. W. F., at 8:30.* Professor WHITTEN. (Second Year.)

The work consists of lectures, supplemented by required readings and practical exercises. The propagation, transplanting, cultivation, pruning, gathering, and marketing of fruits and vegetables, are the principal topics discussed. When necessary, the lectures are given in the field, the green-houses, or the propagating rooms, in order that they may be illustrated by practical object lessons. Each student is required to make cuttings and grafts, prepare composts, sow seeds, transplant, prune, etc., performing as many of the various horticultural operations as the time will permit.

- 2a. Science of Horticulture. Lectures. *First semester, T. Th. S., at 8:30.* Professor WHITTEN. (Third Year.)

Principles underlying the various horticultural operations; plant growth and behavior of plants under culture; variation, selection, and crossing with reference to plant breeding. In this course the aim is to acquaint the student with the reasons for the various horticultural operations—how and under what conditions seeds germinate, cuttings take root, grafts unite, and wounds heal; what environments cause variation in plants; how our cultivated plants are brought to perfection from their wild types; and how and why cultivation affects plants.

- 3b. Forestry. Lectures. *Second semester, T. Th., at 8:30.* Professor WHITTEN. (Third Year.)

In this course are considered the influence of forestry on climate, soil, and flow of streams; the management of forests; the characteristics and uses of typical woods; the specific characters of our principal forest trees in their winter condition; and something of the forest geography of the country.

- 4b. Landscape Gardening. Lectures. *Second semester, M. W., at 9:30.*
Professor WHITTEN. (Fourth Year.)

The laying out and planting of ornamental grounds, the making of roads, lawns, flower and shrubbery borders, the consideration of trees, shrubs, and flowering plants, are the principal topics of this course.

5. General Horticulture. (Twelve Weeks' Winter Course in Agriculture.)
Forty Lectures. Professor WHITTEN.

Construction and management of hotbeds and cold frames: propagation of plants, including germination of seeds, making cuttings, budding, grafting, and layering; pruning and cultivating orchards and small fruits, and spraying for insects and fungous diseases; originating and improving varieties of fruits and vegetables by cross-fertilization, selection and cultivation. (See circular of Short Winter Courses.)

6. Nursery Work. Through January, in Winter School of Horticulture.
Lectures and Laboratory. By a practical nurseryman.

Twenty-four lectures on Practical Nursery Work, embracing grafting, budding, packing for storage or shipment, growing and grading nursery stock, etc. In addition to the lectures, twelve afternoons will be devoted to the actual work of grafting, budding, grading, packing, etc.

7. Orchards and Small Fruits. Through February, in Winter School of Horticulture. Lectures and practical exercises. By a practical orchardist.

Twenty-four lectures, treating of soils and localities adapted to fruit; varieties; time and manner of planting; pruning; cultivation and general treatment; harvesting and marketing fruits. Twelve afternoons will be devoted to practical work in laying out, planting and pruning orchards; and to grading and barreling apples.

8. Market Gardening, and Hotbed Forcing. Through March, in Winter School of Horticulture. Lectures and practical exercises. By a practical market gardener.

Twenty-four lectures, treating of the planting, growing, and marketing of the ordinary garden crops, such as cucumbers, mushrooms, radishes, lettuce, parsley, onions, etc.; hotbed construction; mixing soils, planting, transplanting and watering, bunching, marketing, and hotbed methods. In addition to these lectures, twelve afternoons will be devoted to practical work in growing tomatoes, asparagus, pieplant, lettuce, radishes, etc.

9. Floriculture, Landscape Gardening, Fungous Diseases and Fungicides.
In Winter School of Horticulture. Lectures. Professor WHITTEN.

Floriculture.—Ten lectures and four practical exercises in the propagation and culture of flowers, including the making of cuttings, the mixing of soils, potting, watering, managing temperatures, germination of seeds, marketing cut flowers, etc.

Landscape Gardening.—Ten lectures on the laying out and planting of grounds, the making of drives and walks, the planting, pruning and management of trees, shrubs and flowers.

Fungous Diseases and Fungicides.—Twenty lectures, setting forth the nature of the destructive diseases of orchard trees, small fruits, and other plants. The cause of the various rots, blights, rusts, mildews, scabs, and other fungous diseases which prevail in our State will be described, and specimens of diseased fruits and plants will be shown as object lessons, in the class room, so that the students will be able to recognize them. The nature of the attacks of these diseases upon plants, and how they spread from tree to tree and orchard to orchard, will be made plain. The best means of checking their attacks by sanitary methods and by spraying will be discussed and ample practice will be given in mixing, testing, and applying spraying solutions.

- 10a. Horticulture Laboratory. *First semester, M. W. F., at 8:30.* Professor WHITTEN. (Fourth Year Elective.)

The preceding courses are required. This course provides for carrying on independent lines of investigation—variety study of fruits or vegetables on the grounds; propagation of plants under various conditions of heat, moisture, sunlight, etc., in the greenhouse and in hotbeds; seed testing and the treatment of refractory seeds.

Facilities for Instruction:

The Horticultural grounds include 32 acres, containing a well-planted lawn with shrubbery and flower borders, collections of various kinds of small fruits and grapes, and representative varieties of stone fruits, apples, and pears. Over 900 varieties of orchard fruits are now growing on the grounds. Nut trees from selected stock are being put out, and our native wild fruits are being collected and planted. Many kinds of vegetables are grown every year. A class room, an herbarium and seed room, a photographic room, and a library have been equipped in a substantial brick building on the Horticultural grounds. A green house, one of the finest in the State, has been erected for practical work in Horticulture. This, together with a commodious propagating house and a range of hotbeds, affords ample opportunity for teaching methods of propagating and forcing plants. The department has a Horticultural herbarium of moderate size. The experiment orchards, vineyards, vegetable plots, and nur-

series afford excellent facilities for instruction in horticulture. The department has a file nearly complete of the Experiment Station literature of the country, the Experiment Station card-index to this literature, the reports and proceedings of various State horticultural societies, and the leading horticultural journals. The Horticultural library has been increased to more than six times its former size, and it now contains many valuable cultural and scientific treatises, which afford good opportunity for research in practical methods and in the sciences that underlie them. These works are systematically arranged, and are being indexed. The Experiment Station literature is systematically arranged in chronological order, in convenient filing cases. The department has also received about 700 jars of preserved fruits and vegetables exhibited at the World's Fair at Chicago, and has a good collection of seeds and of horticultural products.

Entomology.

Professor STEDMAN.

The instruction in Entomology is given by lectures supplemented by laboratory and field work. As far as practicable the student collects and studies his own specimens. The collecting is done systematically in the fall while the insects are still alive; later, the field work is entirely replaced by laboratory work. The collecting includes the work done by insects, as well as their eggs, larvæ, pupæ, and adults, while their habits and economy receive due attention. The lectures cover the external and internal anatomy, life histories, habits, economy, and classification of insects; the characteristics of the orders, sub-orders, and principal families, with special emphasis upon those of economic importance, and the best methods of combatting their ravages. The laboratory work embraces the study, by means of actual specimens, of the internal and external anatomy, of life histories, habits, economy, breeding, identification, or determination of genera and species, and the classification of those insects found in our fauna; and also economic work and original investigation for advanced students.

The following courses are offered:

- 1b. General Entomology. (1) Lectures. Internal and external anatomy, life histories, habits, economy, characteristics, classification, methods of destruction, machines and insecticides, Apiculture. *Second semester, W. F., at 9:30.* (2) Laboratory work, collecting.

preserving, breeding, methods, habits, life histories, work, external anatomy, identification or determination of orders, families and genera, classification. *Second semester, M., at 1:30.*

(Third Year.)

2. Economic Entomology. (For students in the Short Winter Course.)

See special catalogue to be issued in October, 1899.

3. Advanced Entomology. Lectures and Laboratory work. Internal anatomy, histology, physiology, embryology, breeding, life histories, habits, economy, distribution, dimorphism, mimicry, determination of species, classification. *First and second semesters at hours to be appointed.* (Fourth Year Elective.)

Must be preceded by Course 1b.

4. Graduate work in Entomology. Laboratory work. Monographing a group (scientific); monographing a species (economic). *Both semesters, at hours to be appointed.*

Must be preceded by Course 3.

All courses in Entomology are elective for Academic and other students. Agricultural students may elect Course 3 in the Senior year, and Course 4 in the Graduate years.

Facilities for Instruction and Research:

The Entomological department occupies the second floor of the Horticultural building. The laboratory contains an Entomological Cabinet illustrating the habits, work, and life histories of the more important injurious and beneficial insects; and several thousand species of adult insects from all orders, correctly classified and labeled, accessible to the student for reference and comparison, and valuable for illustrating the lectures. The laboratory is supplied with compound microscopes, dissecting instruments, glassware, a large microtome, a paraffine bath, a hot oven, large and small breeding cages and jars, aquaria, spraying machines of various kinds, insecticides, and reagents. The department receives twelve current periodicals on the subject of Entomology. These, kept in the laboratory in connection with the department library, are accessible to the students at all times.

Agricultural Chemistry.**Professor SCHWEITZER.**

- 1a. **Agricultural Chemistry. *First semester, T. Th. S., at 9:30.***

(Third Year.)

General introduction; functions of the plant, including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell, an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membranous diffusion; assimilation; conditions of vegetation.

- 1b. **Agricultural Chemistry. *Second semester, T. Th. S., at 9:30.***

(Third Year.)

Soil—its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat and moisture. Soil physics in general. Manures, natural and artificial—their composition, application, value. Theory of rotation of crops: extensive and intensive cultivation; industrial agriculture in general. Farm sanitation; air, respiration, vitiated air and ventilation, infection, contagion, germ-theory of disease. Water—potable water, hard and soft; impurities in it, and their effects upon health and life. Food—composition and general properties; preservation of food; and food adulterations.

Veterinary Science.**Dr. CONNAWAY.**

- 1b. **The Anatomy, Physiology, and Hygiene of domesticated animals.**

*Second semester, M. W. F., at 8:30.***(Third Year.)**

This course is given by lectures and laboratory work, the latter consisting of the complete dissection of one or more animals, and a comparative study of such organs as show variations in the different species. Charts, models, and prepared specimens will also be available for illustrating this study. Practical demonstrations will be given in the Physiological laboratory of the more important functions of the animal body. The study of food stuffs and the action of the digestive fluids will receive special attention.

- 2a. **Veterinary Medicine and Surgery. *First semester, three times a week.***

(Fourth Year.)

The first half of the semester is devoted to the study of the common diseases that affect the internal organs: lungs, stomach, intestines, urinary organs, etc.; the second half of the semester is given to the study of the diseases and conditions that require surgical treatment, such as lameness, wounds, abscesses, tumors, etc. A clinic is held one afternoon of each week for the treatment of the diseases discussed in the class room. In proper season instruction is given in castration, spaying, and caponizing.

- 3b. Contagious, Infectious, and Parasitic Diseases. *Second semester, three times a week.* (Fourth Year.)

This course will include the study of Influenza, Strangles (distemper), Glanders, Black-leg, Anthrax, Tuberculosis, Texas Fever, Actinomycosis (lump jaw), Swine plague, Hog Cholera, and internal and external parasitic diseases, such as tape worm in lambs, verminous bronchitis, scabies, etc.

Practical exercises are given in disinfection of stables, and in preventive inoculation. The bacteriological technique necessary to a proper understanding of this course is given in the Bacteriological department—see below.

A few lectures on National and State Quarantine Regulations will be given by the State Veterinarian.

4. Investigation of Animal Diseases. (Elective.)

Seniors and graduate students will be given an opportunity to assist in the investigations of animal diseases, in progress at the Experiment Station. (Three to six hours' credit.)

Bacteriology.

Dr. KAUFMANN.

- 1a. Bacteriology. Lectures 2 hours a week, laboratory 1 hour a week. *First semester, three hours a week.* (Fourth Year.)

The lectures will introduce the students to general questions in Bacteriology: the nature and development of bacteria, the history of Bacteriology, sterilization, disinfection, etc. In the laboratory they will be instructed in the preparation of culture media and in the methods of obtaining pure cultures. They will study some saprophytic and the most important pathogenic bacteria, in pure cultures on the different culture media and in microscopic preparations.

- 2b. Bacteriology. Lecture 1 hour a week, laboratory 2 hours a week.
Second semester, three hours a week. (Elective.)

The lectures will introduce the student to general questions like immunity and disposition and special questions concerning agriculture, horticulture, dairying, infectious diseases of animals, etc. In the laboratory they will do practical work in the above mentioned subjects.

Shopwork.

Professor MARX; Mr. RODHOUSE; Mr. MASON.

The following course is offered:

1. Wood-working and Pattern-making. *T. Th. S., at 10:30-12:30.*

(First Year.)

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern-making.

Drawing.

Mr. RODHOUSE.

1. Agricultural Drawing. *M. Th. S., at 1:30.*

This work is arranged so as to be of special value to the farmer in designing buildings and machinery and in planning repairs on the farm. It embraces free hand drawing and shading, projections, geometric designs and constructions, working drawings, tracing, and blue printing.

Commercial Studies.

Miss PORTER.

The work in this course does not cover that provided in a full Business College Course, but is designed for those who wish to record the ordinary business transactions of every-day life in a business-like and systematic manner.

To this end instruction is given in correspondence, making out bills and statements, writing receipts, cheques, notes, and drafts, together with the use of various account books. An important part of the work is a thorough drill in journalizing, concluding with the writing of entire sets of books, that the student may make a practical application of his previous work in the various business forms.

This work is required in the first semester of the first year at 10:30 to 12:30, M. W. F.

Stenography.—A full course in stenography is provided for those students who wish to carry on this study while prosecuting regular work in the University.

Three hours of class room work, supplemented by at least the same time of preparation, are required. The first semester is devoted to thorough drill in the principles of the system adopted, and the second semester to an application of these principles to reading and dictation exercises. These exercises include correspondence, addresses and court-reporting. At the end of the year it is expected that the student will have attained a speed of from sixty-five to ninety words a minute, according to his application to the work. During the first year more attention is given to accuracy in writing and *reading*, than to practice for speed.

Those wishing to make the study valuable should continue dictation exercises during the second year.

Military Science.

Captain BUFFINGTON, Mr. TURNER.

An officer of the regular army is detailed by the War Department as Professor of Military Science and Tactics, to carry out the provisions of the act of Congress of 1862, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

Students taking this instruction are required to conform to the special rules and regulations prescribed for the Military department. These requirements are so adjusted as to harmonize with the regular class-work.

The instruction offered in this department is open to all students of the University. Military drill is given three times a week, from 4 to 5 o'clock. Each Senator and Representative of the General Assembly of Missouri is authorized by law to appoint two cadets from his district. Such cadets are matriculated in the Academic and Agricultural departments (including Engineering) free of tuition and other fees, except laboratory deposits. For information about cadetships, uniforms, cadet band, equipment in artillery, and small arms, see announcement of the Department of Military Science and Tactics, page 125.

English.

Assistant Professors PENN and BELDEN. . .

The courses in English embrace the study of language, composition, and literature, arranged as follows:

- 1a. Essentials of English. The Grammar of English, with readings and exercises. Shakspeare's "Tempest," or some like classic, will be used in the class room. *First semester, M. W. F., at 9:30.*
(First Year.)
- 1b. Essentials of English. Analysis, Word Formation, and Composition, with readings in some masterpiece, exercises, and weekly compositions. *Second semester, M. W. F., at 9:30.* (First Year.)
2. Elementary Studies in Literature and Composition. Occasional essays. *T. Th. S., at 9:30.* (Second Year.)

Political Economy.

Professor HICKS.

The following courses are required:

- 1a. Theory of Economics. *First semester, M. W. F., at 11:30.*
(Fourth Year.)
- 2b. Theory of Finance. *Second semester, M. W. F., at 11:30.*
(Fourth Year.)

Course 2b must be preceded by 1a.

Mathematics.

Mr. SWITZLER.

The following courses are required:

- 1a. Elementary Algebra. *T. Th. S., at 8:30.* (First Year.)
Text: Milne's Algebra.
- 2b. Plane Geometry. *Second semester, M. W. F., at 8:30* (First Year.)
Text: Phillips and Fishers' Plane Geometry.
Elementary Algebra. *T. Th. S., at 10:30.* (First Year.,
Text: Same as in course 1.
- 3a. Plane Geometry. *First semester, M. W. F., at 10:30.*
(Second Year.)
Elementary Algebra. *First semester, T. Th. S., at 10:30.*
Text: Same as in Course 2b.

- 3b. Elementary Algebra. *Second semester, T. Th. S., at 10:30.*

(Second Year.)

Candidates for admission to any of these courses must pass a satisfactory examination on Arithmetic, unless they show good grades therein.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

The following courses are required:

- 1a. Elementary Physics. *First semester: Lecture, M., at 11:30; Laboratory, W. S., at 1:30.* (First Year.)
- 2b. Elementary Physics, and Laboratory. *Second semester: Lecture, M., at 11:30; Laboratory, W. S., at 1:30.* (First Year.)
- 3a. Advanced Physics. *First semester, M. W. F., at 1:30.* (Third Year.)

For further information, see Physics, in Academic department, page 91.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. MOORE.

The following course is required:

1. Inorganic Chemistry. *First and second semesters: W., at 9:30; T. W., at 1:30. Professor BROWN, and Mr. MOORE.* (Second Year.)
- For elective courses, see Chemistry, page 92.

Botany.

Professor AYERS; Mr. THOM.

1. General Biology. Lectures and Laboratory. *Both semesters, three times a week, at 10:30.*

The course includes a study of both plant and animal forms. It is designed to give the student a comprehensive idea of the nature of organic beings with sufficient knowledge of the forms of animal and plant life to enable him to work intelligently in either field.

2. Structural Botany of Phanerogams. Lectures and Laboratory. *Three times a week.* (Elective.)
- 3b. Systematic Botany. Class and field work on local flora. *Second semester, three times a week, at 10:30.* (Third Year.)

Geology.

Assistant Professor MARBUT.

The following course is required :

- 4b. Economic Geology. *Second semester, T. W. F., at 10:30.*

(Fourth Year.)

This course deals with subjects from their economic aspect, such as water supply, mineral springs, fertilizers, the origin and relation of soils to the underlying rock structure, clays, cement, etc. Text-book : Tarr's Economic Geology.

Climatology.

Mr. HACKETT.

- 1a. Climatology. *First semester, F., at 9:30.*

(Fourth Year.)

This course covers Elementary Meteorology; the laws of storms; weather forecasts, how made, and distributed, and the advantages to be derived from them; frosts, how they may be anticipated, and what measures may be taken to prevent damage therefrom; weather charts and their uses; the climate of Missouri; local climatic peculiarities, and their effects upon certain crops.

B. THE AGRICULTURAL EXPERIMENT STATION.

This station was established by the act of Congress of 1887, and by the acts of the General Assembly of Missouri accepting its provisions. By order of the Board of Curators of the University of the State of Missouri it is made a department of the College of Agriculture.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations :

"Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and
tion of the college or colleges or agricultural department of colleges in each State or Territory, established, or which may hereafter be established, application of agricultural science, there shall be established, under direc-

lished, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled 'An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts,' or any of the supplements to said act, a department to be known and designated as an 'Agricultural Experiment Station.'

"SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analyses of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

"SEC. 3. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe."

It will be noted that the act of Congress of 1862 was designed to promote *Agricultural education*, while that of 1887 provides for *Agricultural investigation*.

The Station uses such parts of the College farm and equipment as are needed for experiments.

The results of experiments are given to the public in a series of bulletins, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and from 1 to 47 of the Station series, since its organization in 1888.

During the year seven Bulletins and an Annual Report were published, aggregating 145 pages, reporting the results of careful scientific experiments on insects injurious to fruit, sugar beets, asparagus growing, winter protection of peaches and varieties and types of grapes.

Thirteen thousand copies of each were distributed free to the newspapers of the State and to the agricultural press, the libraries of colleges and high schools in Missouri, and to the leading farmers of this and adjoining States. In addition to the regular Bulletins of the Experiment Station, numerous Circulars of Information and Special Newspaper Bulletins have been published.

The experimental work has been greatly expanded and made more exact and scientific, its practical and economic phases being kept constantly in view.

In agriculture, investigations are now under way covering questions of maintenance of soil fertility; the renovation of worn-out soils; the most efficacious rotation of crops; green manure crops, forage crops; varieties of grains, grasses, potatoes, etc.; best methods of tillage for corn; effect of subsoiling and tile draining; feeding experiments designed to ascertain the cheapest foods for pork and beef production, and the cheapest method of wintering cattle.

In Horticulture over 500 named varieties of apples, 130 of plums, 140 of grapes, 25 of peaches, 25 of pears, 160 of strawberries and other fruits, are growing and being tested upon the Horticultural grounds. In addition, several hundred varieties of seedling strawberries, one half of them the result of careful cross-breeding of known parents, have been originated and are giving promise of good results on the grounds. During the past year, seeds of hand-pollinated peaches and plums, and selected seeds and plants of promising types of native nuts, persimmons, pawpaws, and other wild fruits have been planted. A collection of figs, Japanese persimmons, and other foreign fruits and nuts, has been secured. The work of plant breeding has been continued with a view of obtaining varieties better adapted to our climatic conditions. The leading varieties of vegetables are tested as they come on the market.

Experiments in spraying with various mixtures for fungous diseases are carried on in a number of private orchards as well as on the Horticultural grounds. Experiments in pruning and grafting are in progress in the new orchards and in the vineyard. The various orchard trees and vines are observed for their pollinating characteristics and to see whether self or cross fertilization occurs in each variety. Methods of protecting tender buds are being tried. An experiment in breeding tomatoes is in progress.

The Entomological department is conducting extensive experiments in the best methods of suppressing insects injurious to farm, garden and orchard crops.

The extensive experiments with Texas fever carried on by the Station in co-operation with the Missouri State Board of Agriculture and the Texas Experiment Station have been continued with very promising results.

A careful study of the composition and food value of the principal kinds of animal and vegetable fats is being made by the Chemical department of the Station in co-operation with the Federal Government.

For further information concerning the College of Agriculture or the Experiment Station, address

H. J. WATERS,
Dean and Director,
Columbia, Mo.

OFFICERS OF THE EXPERIMENT STATION. .

BOARD OF CONTROL:

The Curators of the University of the State of Missouri.

ADVISORY COUNCIL:

The Missouri State Board of Agriculture.

OFFICERS OF THE STATION.

THE PRESIDENT OF THE UNIVERSITY.....	
H. J. WATERS, B. A. S.....	Director
PAUL SCHWEITZER, Ph. D.....	Chemist
J. C. WHITTEN, B. S.....	Horticulturist
J. M. STEDMAN, B. S.....	Entomologist
J. W. CONNAWAY, M. D. C.....	Veterinarian
N. O. BOOTH, B. Agr.....	Assistant in Horticulture
T. I. MAIRS, B. Agr.....	Assistant in Agriculture
C. THOM, A. B., M. A.....	Assistant in Botany
W. B. CADY, B. S.....	Assistant in Chemistry
*A. E. HACKETT.....	Section Director Missouri Weather Service
JOHN SCHNABEL.....	Gardener
IRVIN SWITZLER.....	Secretary
R. B. PRICE.....	Treasurer
C. L. WILLOUGHBY.....	Clerk and Stenographer

*In the service of the U. S. Government.

C. SCHOOL OF MECHANIC ARTS.

COURSE IN MECHANIC ARTS.

The object of this course is to educate the mental and physical powers of the student simultaneously—to train the mind to the hand and the hand to the mind. The instruction is intended to develop the power of observing phenomena which occur about us daily, and to cultivate skill of hand and eye.

The course is sufficiently broad to enable the student at its completion to continue work in the University. After the completion of this course, any of the Engineering courses can be completed in three years more.

The entrance requirements for this course are the same as for the Agricultural course. (See page 136.)

First Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	6
English	3	English	3
Book-keeping	6	Shop, carpentry and joinery....	6
Shop, carpentry and joinery....	3	Drawing	3
Drawing	3		

Second Year.

First Semester.		Second Semester.	
Mathematics	6	Mathematics	6
English	3	English	3
Chemistry	3	Chemistry	3
Shop, forging.....	3	Shop, forging.....	3
Drawing	3	Drawing	3

Third Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	3
English	3	English	3
Physics	3	Physics	3
French, German, Spanish.....	3	French, German, Spanish.....	3
Drawing	3	Drawing	3
Shop, machine.....	3	Shop, machine.....	3

Fourth Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	3
English	3	English	3
Descriptive Geometry.....	3	Elements of Applied Mechanics.	3
French, German, Spanish.....	3	French, German, Spanish.....	3
Drawing	3	Descriptive Geometry.....	3
History	3	History	3

(For description of Shopwork, see page 152.)

The following courses are offered :

1. Wood-working and Pattern-making. *M. W. F., at 10:30-12:30.*

(First Year.)

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern-making.

2. Forging. *First semester, M. S., at 1:30; Second semester, M. F., at 1:30.*

(Second Year.)

These courses are expected to give the student not only a knowledge of the methods of the blacksmith, but also manual skill in the handling of tools.

3. Machine-work (For Senior Engineers). *M. W. F., at 1:30.*

The instruction in the machine-shop is carried on in substantially the same manner as in the wood-work. The course begins with a series of graded exercises, which give the student familiarity with the tools of the craft, and with the operations for which they are particularly designed, and ends with practice in the construction of parts of machinery, and, time permitting, in the building of complete machines.

Course 1 is for students in the School of Agriculture, Courses 1, 2, and 3 for students in Mechanic Arts, and for Engineering students.

Facilities for Instruction :

The building for Mechanic Arts, 108x117 feet, has two stories and a basement. It contains six work-shops 40x40 feet, an exhibit hall 25x40, two offices 16x18, one drawing-room 40x40, two class-rooms 18x22, besides store-rooms, an engine-room, lavatories, etc. The machinery is driven by a 12x36 inch Corliss engine.

Four hundred students in classes of 24, each class occupying two hours and a half a day, can easily be taught. The carpenter and pattern shop has accommodations for four classes of 24 students each. Each student has for his exclusive use a lock-drawer and a set of tools, for the care and safety of which he is held responsible.

There are 25 speed lathes for wood-turning, 25 sets of bench tools, 96 sets of edged tools, and as many lock-drawers.

The blacksmith-shop is equipped with 25 forges, 25 anvils, and 25 sets of forge tools.

The machine-shop is equipped with three screw-cutting engine lathes 14" swing, 8' bed; one screw-cutting engine lathe 18" swing, 8' bed; one polishing lathe, 12" swing, 6' bed; one 26x26 Gray planer; one 18" crank-shaper; one pipe-cutting and threading machine; one wet and dry emery grinder and surfacer; one 24" drill-press; and with tool-room and ample bench outfit.

The blast for the forges is supplied by a power blower. A 48" exhaust fan keeps the shops cool and free from smoke and gases, even when all the fires are going in the forges.

Two large shops, each 40x45 feet, are as yet unfurnished, but will be equipped with benches and speed lathes, or moulding outfit, to suit the demands of the future.

The whole building is lighted by a 360-lamp dynamo, situated in the engine-room.

The teaching is oral. The instructor at the bench, machine, or anvil fully explains the principles to be used, and all work involving new principles is executed in the presence of the whole class. Free use is made of drawings and the black-board.

When every step has been explained, the class proceeds to the execution of the work, while the instructor superintends and gives help to such as need it.

A series of 25 or 30 graduated exercises is given in each shop. All the work is disciplinary. Special trades are not taught, nor are articles manufactured for sale. The value lies in the educational result of each exercise, in training the mind and hand to act simultaneously—the hand at the will of the mind.

The course in Mechanic Arts offers a great opportunity to teachers who wish to prepare themselves to give instruction in Manual Training and Drawing in the High Schools and the district schools of Missouri. St. Louis and Kansas City have taken steps to introduce Manual Training and Drawing in the district schools. Similar movements have been made at Moberly, Carthage, and other cities. Within a few years there will be probably not a district school in any town of five thousand inhabitants in Missouri in which Manual Training and Drawing will not be taught regularly. The State University is the only institution in Missouri at which teachers can find instruction in Pedagogy and at the same time in Manual Training and Drawing. Our shops have cost us, including the building, and the equipment, more than \$50,000. The entire building—a large one—is devoted to drawing and shop work. Three men give instruction regularly in these subjects. The work in the shops requires

skill rather than strength. It can be done by women as well as by men. A number of women have taken it with eminent success.

On the completion of the four years' course in Mechanic Arts a certificate is given.

Other Courses:

The School of Mechanic Arts offers several elementary courses to students in the School of Agriculture, which are announced on page 152. A four years' course is outlined in Mechanical Engineering (see page 170), which leads to a professional degree.

For information as to tuition fees and other expenses, see pages 44-45.

D. SCHOOL OF ENGINEERING.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. A. S.,
Dean of the Faculty.

CHRISTIAN WILLIAM MARX, B. E.,
Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

HOWARD BURTON SHAW, B. C. E., A. M.,
Assistant Professor (in charge) of Electrical Engineering.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

MILTON UPDEGRAFF, M. S., B. C. E.,
Professor of Astronomy, and Assistant Professor of Mathematics.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Physiology.

JOHN PICKARD, A. M., Ph. D.,
Lecturer on Ancient Architecture.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

HOWARD AYERS, B. S., Ph. D.,
Professor of Biology.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

CURTIS FLETCHER MARBUT, B. S., A. M.,
Assistant Professor (in charge) of Geology and Mineralogy.

PAUL KAUFMANN, M. D.,
Professor of Bacteriology.

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

RICHARD B. MOORE, B. S.,
Instructor in Chemistry.

THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.

ELLIOTT JEFFRIES MASON, B. S.,
Instructor in Mechanic Arts.

CHARLES THOM, A. B., A. M.,
Instructor in Biology.

FELLOWS.*

THOMAS ELMER McGAUGH, A. M.,
Fellow in Bacteriology.

BERT MUNDAY, M. S.,
Fellow in Physiology.

ROYALL HILL SWITZLER, A. B.,
Fellow in Mathematics.

CLARENCE MARTIN JACKSON, B. S.,
Fellow in Biology.

*Fellows are elected for one year and are required to teach five or six hours a week.

Requirements for Admission:

The following are the requirements for admission to the Freshman Class for the session of 1899-1900:

1. French or German—two years' work.

The two years' work in German means the ability to read at sight ordinary German prose, and to translate simple English sentences into German, and includes a correct pronounciation of the language. Two years' work in French means a like ability in French. For the present the University provides instruction for such students as have not had

the two years of French or German required for entrance, and are therefore conditioned thereon, but such work is not counted toward graduation. For entrance only students may for the present substitute two years of Latin for the requirement in French or German, but the suspended requirement must be made good as soon as possible.

2. English. Same as for B. S. courses in the Academic department. See page 23.

3. Mathematics. Algebra and Plane Geometry. The equivalent of Milne's High School Algebra, and of Phillips and Fisher's Plane Geometry, is required.

4. Science. One year's work each, with laboratory practice, in any two of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. History. Same as for the Academic department, B. L. Course, page 23.

A student must pass on at least ten units (see page 24). On the other two he may be conditioned; but no student deficient in Mathematics will be allowed to enter the Engineering department.

Courses and Degrees:

The five courses offered below lead respectively to the degrees of Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, Bachelor of Science in Sanitary Engineering, and Bachelor of Science in Architecture. A special course of one year in Civil Engineering for surveyors leads to a certificate.

During the vacation following the Junior year, Engineering students are required to visit, and to write a report, with necessary drawings, of some engineering enterprise in their respective lines of work.

For general statement as to buildings and equipment, see pages 38-41.

For information as to tuition charges, fees, etc., see pages 44-5.

The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

Civil Engineering.

Professor CORY.

The instruction is given by means of lectures and recitations, supplemented by draughting, field, and laboratory work. The field work embraces the modern methods of land, railroad, and mining surveying. While laboratory work is provided in Chemistry, Geology, Physics, and Engineering. The course of instruction has been planned with a view to laying a substantial foundation for the general and technical knowledge needed by practical engineers.

There is a complete equipment of Transits, Compasses, Levels, Chains, Leveling-rods, Stadia rods, etc., and students have free access to the museums and laboratories in all the other departments of the University.

COURSE IN CIVIL ENGINEERING.

Freshman Year.

First Semester.

Plane Trigonometry and Solid Geometry.....	3
Algebra	3
English—Rhetoric, Composition and Literature.....	3
Descriptive Geometry—Orthographic projections, problems of points, lines and planes. Representations of surfaces, tangencies and intersections, perspective and isometric.....	3
Chemistry	3
Shop—Use of joiners' tools, and wood-turning.....	3

Second Semester.

Spherical Trigonometry and Analytical Geometry.....	3
Algebra	3
English—Rhetoric, Composition and Literature.....	3
Descriptive Geometry.....	3
Chemistry	3
Shop—Pattern-making	3

Sophomore Year.

First Semester.

Drawing—Elements of machine drawing.....	3
Physics	3
Mathematics—Analytical Geometry	3
Shop—Forging	3
Metallurgy	3

Second Semester.

Drawing—Tinting, tracing, blue printing, and topographical.....	3
Physics	3
Mathematics—Calculus.....	3
Shop—Forging	3
Surveying—Use of instruments, the theory and practice of Land Surveying, Topography	3

*Junior Year.**First Semester.*

Mechanics of Engineering.....	6
Calculus	3
Railroad Engineering—Economic theory of location, curves, field engineering, construction, signal systems, track work, elevated and underground roads, etc.....	3
Steam Engineering—Types of engines and boilers, details of construction, indicator, valve gears and valve adjustments.....	3

Second Semester.

Mechanics of Engineering.....	6
Calculus	3
Railroad Engineering.....	3
Steam Engineering	3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

*Senior Year.**First Semester.*

Astronomy—Practical Astronomy, with night observations.....	3
Framed Structures	3
Bridge Engineering—Design and details.....	3
Hydraulics	3
General Civil Engineering—highways, masonry, foundations, municipal and sanitary engineering, etc.....	3

Second Semester.

Geodesy and Least Squares—Figure of the earth, U. S. Coast and Geodetic Surveys, etc.....	3
Hydraulic Engineering—Water collection and distribution, water-wheels, turbines, rivers, harbors, canals, etc.....	3
Bridge Engineering	3
General Civil Engineering.....	3
Machine Design	3

COURSE IN SURVEYING.

A special course in Surveying is offered in addition to the regular four years' course. This is designed especially for those wishing to fit themselves for the position of County Surveyor or Government Land Surveyor. A certificate of proficiency is given to those who complete this course, which may be done in forty weeks. The requirements for entrance are the same as those for the regular course, with a working knowledge of Trigonometry added.

For the Rollins Scholarship, see page 51.

Electrical Engineering.

Assistant Professor SHAW.

This course fits young men for electrical designing, manufacturing, contracting, and for the installation and management of light and power stations.

The first two years are devoted to preliminary training in the languages, mathematics, the sciences, and in drawing and shopwork. The technical work comes in the last two years and consists of the theory and principles of electricity and magnetism; electrical measurements; calibration of instruments; tests of all kinds; design and construction; study of special problems.

Especial attention is paid to alternating current phenomena.

Instruction is given by means of recitations, lectures, and laboratory work.

The apparatus is new, from the best makers, and includes instruments for electrical measurements of precision, a storage battery conveniently arranged for testing, an electric light plant, various types and sizes of direct and alternating current dynamos and motors, measuring instruments, etc.

COURSE IN ELECTRICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 166).

Junior Year.

First Semester.

Mechanics of Engineering (See M. E. course, page 170)	6
Calculus	3
Electrical Machinery—Principles, construction, design and operation of generators, motors, etc.; power transmission and distribution: system and plants. Laboratory: characteristics, efficiencies, output limits, insulation tests, diseases and remedies	3
Electricity and Magnetism—General principles and laws and their application in electrical, magnetic and electromagnetic measurements of precision; cable testing; calibration of instruments	3

Second Semester.

Mechanics of Engineering	6
Calculus	3
Electrical Machinery	3
Electricity and Magnetism	3

Vacation Work.

Every student of the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Alternating Currents—Theory of current flow; single and multiphase generators, motors, transformers and instruments; system of light and power distribution; laboratory tests as to regulation, operation and efficiency; calibration of instruments.....	6
Steam Engineering (See M. E. course, page 170).....	3
Electrical Design	3
Shop—Machine and vise work on metals.....	3

Second Semester.

Alternating Currents.....	6
Electrical Design	3
Steam Engineering (See M. E. course, page 170).....	3
Shop—Machine and vise work on metals.....	3

Mechanical Engineering.

Professor MARK.

The practical and theoretical training given is intended to prepare young men for responsible positions. The practical work familiarizes them with the use of machine and hand tools; the theoretical acquaints them with the principles underlying all machine construction. Students thus become familiar with the conditions and problems that confront all designers, and all managers of machine shops.

In the study of prime movers special attention is given to turbines and other water motors, and to the steam engine.

In machine construction the theory of mechanism is thoroughly studied. It embraces the study of gearing, screws, cranks and levers, together with the design of machines and the materials used in their construction.

In mill-work, ventilation, heating, lighting, fire protection, arrangement of shafting, belting and machinery in manufacturing establishments, practical problems involving strength of shafting, belting, gearing, and the electrical transmission of power are fully treated.

In steam engineering attention is given to chimneys, furnaces, boilers, and the setting of boilers with reference to proper combustion of fuel, to securing the greatest efficiency in the production of steam, and to propor-

tioning parts for strength, durability and accessibility for repairs and cleaning. The care and management of boilers, engines and entire steam plants is an essential part of the study.

While pursuing these studies, the student is required to make plans, working drawings and estimates.

In the laboratory special attention is given to tests of engineering materials with regard to tension, crushing, elongation, and shearing; engine and boiler trials, as to efficiency; calorimeter trials as to quality of steam; valve-setting by aid of indicator. The erection, alignment and setting of engines are carefully considered.

COURSE IN MECHANICAL ENGINEERING.

The Freshman and Sophomore years are identical with those of the course in Civil Engineering, page 166.

Junior Year.

First Semester.

Mechanics of Engineering—Statics, dynamics.....	6
Steam Engineering—Elements of steam engineering; description of types of boilers; engines, details of construction, dimensions for given power plant, study of steam engine; indicator, valve gears and valve adjustments.....	3
Mathematics—Calculus	3
Kinematics—Principles of mechanism, rolling curves, teeth of wheels, quick return motion, straight line motion, valve and link motions..	3

Second Semester.

Mechanics of Engineering—Strength of material, stress and strain diagrams	6
Mathematics—Calculus	3
Machine Design	3
Steam Engineering—Boilers, study of details and different styles—Boiler testing	3

Vacation Work.

Every student of the Junior class is required during vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.

Steam Engine—Detail study of different types, design and construction.	3
Electrical Machinery.....	3
Shop—Machine and vise work.....	3
Hydraulics	3
Thermodynamics	3

Second Semester.

Steam Engine Design continued.....	3
Hydraulics and Hydraulic Motors—Water wheels, turbines and pumps.	3
Mechanical Laboratory.....	3
Shop—Machine and vise work.....	3
Electrical Machinery.....	3

The students in Mechanical Engineering have the use of full sets of working drawings of standard modern engines, a small but well equipped technical library, Indicators, Planimeters, Calorimeters, Tachometers, Thermometers, Crosby Steam-gauge Tester, Injectors, Absorption and Transmission Dynamometers, Engine models, Pyrometers, and Boiler testing tanks, etc. They have the advantage of the shops of the College of Agriculture and Mechanic Arts. In these shops they are trained in the use and care of wood and iron-working tools. The 12"x36" Corliss engine and five boilers (one down draft, one Helne and three tubular return) are used for experimental work. They aggregate 650 horse power.

The students in Mechanical Engineering have the use of the Testing, Hydraulic and Cement laboratories of the Civil Engineering department, and the Electrical laboratory, in such branches as are required by the M. E. course.

For description of shops, see "School of Mechanic Arts," page 160.

Sanitary Engineering.

Professor CORY.

This course is intended to give the students such knowledge of the principles and practices of modern sanitation as will make them distinctively sanitary engineers. To this end the course has been made most thorough as regards those sciences which immediately underlie this particular branch, Biology, Physiology, Bacteriology, and Chemistry.

The modern methods of constructing buildings, ventilation, lighting, heating, plumbing, sewage and garbage disposal, water supply and city engineering are taught thoroughly by means of lectures, recitations, laboratory work, and the study of existing buildings and plants.

COURSE IN SANITARY ENGINEERING.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 166) with the exception that Chemical Water Analysis is required three hours per week during the first semester of the Sophomore year in the place of Metallurgy.

Junior Year.

First Semester.

Mechanics	6
Calculus	3
Steam Engineering (See M. E. course, page 170)	3
Biology	3

Second Semester.

Mechanics	6
Calculus	3
Steam Engineering (See M. E. course, page 170)	3
Biology	3

*Senior Year.**First Semester.*

Hydraulics	3
Water Supply—Examination of sources and waters, sedimentation, filtration, relation to health, etc.	3
Bacteriology	3
Heating and Ventilation—Various systems of and the design and maintenance of the same, estimates, specifications, etc.	3
Sewerage—Collection, disposal, design of systems, estimates, specifications, etc.	3

Second Semester.

Hydraulics	3
Water Supply	3
Bacteriology	3
Hygiene	3
Sewerage	3

Architecture.

This course, offered for the first time, is intended to train men for practical work as draughtsmen, designers, contractors, and architects.

History of Architecture is taught by the Archæological Department (see page 82), which is well equipped. Drawing is continuous throughout the course, particular attention being paid to rapid, free-hand sketching.

The details of modern building construction are carefully considered from the theoretical and practical standpoints. Specifications, estimates and contracts are carefully taught.

The instruction is given by means of lectures, recitations, and practice in drawing, modeling, and designing, besides work in the Mechanical Laboratory.

The Junior and Senior work of this course will not be offered in 1899-1900.

COURSE IN ARCHITECTURE.

The Freshman and Sophomore years are identical with those of the Civil engineering course (page 166).

Junior Year.

First Semester.		Second Semester.	
Mechanics of Engineering.....	6	Mechanics of Engineering.....	6
Calculus	3	Calculus	3
Steam Engineering.....	3	Steam Engineering.....	3
History of Architecture.....	3	History of Architecture.....	3

Vacation Work.

Every student in the Junior class is required during the vacation following the Junior year to prepare a report upon some suitable engineering method of construction from personal examination and study. These reports are required to be handed in during the following term.

Senior Year.

First Semester.		Second Semester.	
Architecture	6	Architecture	6
Drawing	3	Drawing	3
Architectural Design.....	3	Architectural Design.....	3
Heating and Ventilation.....	3	Plumbing	3

*Hydraulic Engineering.

This is a graduate course, open to those who have completed the courses in Civil and Mechanical Engineering and to others having equivalent preparation.

It is intended to furnish thorough training in the utilization of water as a source of power, water supply, drainage, irrigation, and waterways.

COURSE IN HYDRAULIC ENGINEERING.

First Semester.		Second Semester.	
Advanced Hydraulics.....	3	Advanced Hydraulics.....	3
Pumping Machinery.....	3	Pumping Machinery.....	3
Thermodynamics	3	Rivers, Harbors, and Canals....	3
Irrigation	3	Irrigation	3

Thesis: An original investigation of some important problem and the presentation of the results in a satisfactory thesis is required.

*This course will not be given in 1899-1900.

VIII. The School of Mines and Metallurgy.

A Department of the University of the State of Missouri.

(At Rolla, Missouri.)

EXECUTIVE COMMITTEE.

JOHN D. VINCIL, Chairman.....	St. Louis
M. E. BENTON.....	Neosho
JAS. T. MOORE.....	Lebanon
CHAS. L. WOODS,	HENRY WOOD,
Secretary.	Treasurer.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

GEORGE EDGAR LADD, Ph. D.,
Director and Professor of Mining and Geology.

ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

ARTHUR HENRY TIMMERMAN, B. S., M. M. E.,
Professor of Physics.

EUGENE THOMAS ALLEN, Ph. D.,
Professor of Chemistry.

GEORGE REINOLD DEAN, C. E., B. S.,
Professor of Mathematics.

F. W. DRAPER, E. M.,
Professor of Metallurgy.

PAUL JULIUS WILKINS, B. S.,
Instructor in Modern Languages.

JOHN BENNETT SCOTT,
Instructor in English.

ARTHUR D. TERREL,
Instructor in Drawing.

ROGER H. HATCHETT,
Instructor in Shopwork.

GEORGE C. CLARK,
Assistant in Chemical Laboratory.

Organization:

In 1870, the General Assembly, in accepting the donation by the general government of lands for educational purposes, established an Agricultural College and School of Mines and Metallurgy, "the leading object of these Colleges" being "to teach such branches as are related to agriculture and the mechanic arts and mining, including military tactics, and without excluding other scientific and classical studies, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." (R. S. 1889, section 8739.) The Statutes fix the status of the School of Mines as a College of the State University. Its affairs are under the immediate supervision of the Executive Committee, consisting of three members of the Board of Curators of the University.

Location:

The School is located at Rolla, the county seat of Phelps county, on the St. Louis and San Francisco railroad, about midway between St. Louis and Springfield. Rolla has an altitude of 1140 feet above sea level and enjoys an agreeable and notably healthful climate. It is midway between the mining districts of Southeast and Southwest Missouri.

Requirements for Admission:

Applicants for admission not having diplomas from approved high schools, must offer themselves for examination on eight of the following subjects, and must pass, satisfactorily, on six of these subjects, including Algebra and Plane Geometry. Conditions must be made up before the close of the Freshman year:

1. English. English Grammar and Composition.
2. History. The equivalent of Myers' General History.
3. Algebra. The equivalent of Milne's High School Algebra, through quadratic equations.
4. Plane Geometry. The equivalent of Phillips and Fisher's Plane Geometry.
5. Physics. One year's work in a good high school, with laboratory practice.
6. Chemistry. One year's work in a good high school, with laboratory practice.
7. German. The equivalent of one year's work in a good high school.
8. French. The equivalent of one year's work in a good high school.
9. Botany. One year's work in a good high school, with laboratory practice.

10. Zoology. One year's work in a good high school, with laboratory practice.

The School of Mines offers the following four year courses and several special shorter courses :

- I. MINING ENGINEERING.
- II. CIVIL ENGINEERING.
- III. CHEMISTRY AND METALLURGY.
- IV. GENERAL SCIENCE.

Degrees :

For the completion of any of these courses the degree of Bachelor of Science (B. S.) is given. The further degree of Engineer of Mines (E. M.), Civil Engineer (C. E.), Metallurgical Engineer (Met. E.), or Master of Science (M. S.) will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

I. COURSE IN MINING ENGINEERING.

This course is suited to fit a man for the conduct of mining operations in all their variety, from the prospecting for the mine through its working and from the treatment of its ores to the delivery of the finished product on the market.

COURSE I. MINING ENGINEERING.

FRESHMAN YEAR.

First Term.

Higher Algebra, lectures and recitations.....	5 hours
General Chemistry, lectures and recitations.....	4 hours
English, lectures and recitations.....	5 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

Second Term.

Trigonometry, lectures and recitations.....	5 hours
Geometry, lectures and recitations.....	5 hours ..
English, lectures and recitations.....	5 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

Third Term.

Trigonometry, lectures and recitations.....	4 hours
Physics, lectures and recitations.....	5 hours
English, lectures and recitations.....	2 hours
French or German.....	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

SOPHOMORE YEAR.

First Term.

Analytic Geometry, lectures.....	5 hours
Inorganic Chemistry, lectures.....	4 hours
Surveying, lectures	3 hours
French or German, lectures.....	3 hours
Chemistry, laboratory work.....	2 afternoons
Field Practice in Surveying.....	3 afternoons

Second Term.

Descriptive Geometry, lectures and recitations.....	7½ hours
Calculus, lectures and recitations.....	2 hours
Applied Chemistry, lectures and recitations.....	5 hours
French or German, recitations.....	3 hours
Chemistry, laboratory work.....	3 afternoons
Drawing	2 afternoons

Third Term.

Calculus, lectures and recitations.....	5 hours
Physics, lectures and recitations.....	5 hours
French or German, recitations.....	5 hours
Chemistry, laboratory work.....	2 afternoons
Surveying, field practice.....	1 afternoon
Physics, laboratory	2 afternoons

JUNIOR YEAR.

First Term.

Physics, lectures and recitations.....	5 hours
Geology, lectures.....	3 hours
Mineralogy, lectures	4 hours
Masonry Construction, lectures and recitations.....	3 hours
Chemistry, quantitative, laboratory work.....	3 afternoons
Ore Dressing, class room and laboratory.....	Saturdays
Physics, laboratory work.....	2 afternoons

Second Term.

Physics, lectures and recitations.....	2 hours
Geology, lectures	2 hours
Mineralogy, lectures	4 hours
Mechanics, lectures and recitations.....	5 hours
Dynamo Electrical Machinery, lectures and recitations.....	3 hours
Physics, laboratory work.....	2 afternoons
Electrical Measurements, laboratory work.....	3 afternoons

Third Term.

Geology, lectures.....	3 hours
Ore Dressing, lectures.....	3 hours
Metallurgy, lectures	4 hours
Alternate Current Machinery, lectures and recitations.....	2 hours

Stereotomy, lectures and recitations.....	1 hour
Ore Dressing, laboratory work.....	Saturdays
Drawing	2 afternoons
Dynamo and Motor Testing, laboratory work.....	2 afternoons

SENIOR YEAR.*First Term.*

Metallurgy, lectures	5 hours
Electric Transmission, lectures and recitations.....	5 hours
Frame Structure, lectures and recitations.....	5 hours
Metallurgy, laboratory work	Saturdays
Metallurgy, designing	1 afternoon
Electrical Transmission, laboratory.....	2 afternoons
Drawing	1 afternoon

Second Term.

Metallurgy, lectures	5 hours
Steam Engineering and Power Transmission.....	5 hours
Hydraulics, lectures and recitations.....	5 hours
Designing	4 afternoons
Thesis	1 afternoon

Third Term.

Mining, lectures	4 hours
Metallurgy, laboratory work.....	Saturdays
Thesis	5 afternoons

COURSE II. CIVIL ENGINEERING.**FRESHMAN YEAR.**

Same as in Mining Engineering.

SOPHOMORE YEAR.

Same as in Mining Engineering, except that in third term Civil Engineers take Chemical Laboratory work one afternoon, and Field Practice two afternoons, instead of Chemical Laboratory two afternoons and Field Practice one afternoon.

JUNIOR YEAR.*First Term.*

Physics, lectures and recitations.....	5 hours
Geology, lectures and recitations.....	3 hours
Masonry Construction, lectures and recitations.....	2 hours
Elective	2 hours
Physics, laboratory work....	2 afternoons
Drawing and Field Practice.....	3 afternoons

Second Term.

Physics, lectures and recitations.....	2 hours
Geology, lectures and recitations.....	2 hours
Mineralogy, lectures and recitations.....	4 hours
Mechanics of Engineering, lectures and recitations.....	5 hours
Elective	2 hours
Physics, laboratory work....	2 afternoons
Drawing	3 afternoons

Third Term.

Geology, lectures and recitations.....	3 hours
Mineralogy, lectures and recitations.....	4 hours
Lines of Communication, lectures and recitations.....	5 hours
Stereotomy, lectures and recitations.....	1 hour
Metallurgy, lectures and recitations.....	4 hours
Drawing and Field Practice.....	5 afternoons

SENIOR YEAR.

First Term.

Frame Structures, lectures and recitations.....	5 hours
Astronomy, lectures and recitations.....	3 hours
Elective	5 hours
Drawing and Field Practice.....	3 afternoons
Elective, laboratory work.....	2 afternoons

Second Term.

Hydraulics, lectures and recitations.....	5 hours
Steam Engineering	5 hours
Elective	3 hours
Designing and Drawing.....	2 afternoons
Elective, laboratory work.....	1 afternoon
Thesis work....	2 afternoons

Third Term.

Bridge and Sanitary Engineering, lectures and recitations..	3 hours
Elective	5 hours
Designing and Drawing.....	2 afternoons
Thesis work	4 afternoons

COURSE III. CHEMISTRY AND METALLURGY.

FRESHMAN YEAR.

Same as in Mining Engineering, except that German is obligatory.

SOPHOMORE YEAR.

Class room work same as in Mining Engineering, except that during the first term Elective 3 is substituted for Surveying.

Laboratory Work.

First Term.

Chemistry	3 afternoons
Drawing	2 afternoons

Third Term.

Chemistry	3 afternoons
Physics	2 afternoons

JUNIOR YEAR.

First Term.

Physics, lectures and recitations.....	5 hours
Geology, lectures and recitations.....	3 hours
Mineralogy, lectures and recitations.....	4 hours

Masonry Construction, lectures and recitations.....	3 hours
Physics, laboratory work.....	2 afternoons
Chemistry, laboratory work.....	2 afternoons
Ore Dressing	Mondays

Second Term.

Physics, lectures and recitations.....	2 hours
Geology, lectures and recitations.....	2 hours
Mineralogy, lectures and laboratory.....	4 hours
Theoretical Chemistry	3 hours
Elective	2 hours
Physics, laboratory work.....	2 afternoons
Chemistry, laboratory work	3 afternoons

Third Term.

A. Geology	3 hours
B. Stereotomy	1 hour
C. Theoretical Chemistry	3 hours
Ore Dressing, lectures and recitations.....	
Metallurgy, lectures and recitations.....	4 hours
Chemistry, laboratory work.....	4 afternoons
Ore Dressing, laboratory work.....	Mondays
Stereotomy, for students electing A. and B.....	1 afternoon

SENIOR YEAR.

First Term.

Metallurgy, lectures and recitations.....	5 hours
Thermodynamics, lectures and recitations.....	2 hours
*Organic Chemistry, lectures and recitations.....	3 hours
Elective	3 hours
Metallurgy, laboratory work.....	Mondays
Chemistry, laboratory work.....	2 afternoons
Designing	2 afternoons

Second Term.

Metallurgy, lectures and recitations.....	5 hours
Electro-Metallurgy, lectures and recitations.....	3 hours
*Organic Chemistry, lectures and recitations.....	2 hours
Elective	3 hours
Electro-Metallurgy, laboratory work.....	3 afternoons
Chemistry, laboratory work.....	2 afternoons

Third Term.

*Organic Chemistry, lectures and recitations.....	4 hours
Metallurgical Problems	2 hours
Elective	3 hours
Metallurgy, laboratory work	Mondays
Chemistry, laboratory work and thesis.....	5 afternoons

*Students specializing in Metallurgy may substitute elective work for this subject.

COURSE IV. GENERAL SCIENCE.*

Academic Department, with Electives from the courses in Engineering.

FRESHMAN YEAR.

First Term.

English Composition, Course I.....	5 hours
Algebra	5 hours
Geometry	5 hours
Chemistry	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon

Second Term.

English, Course I.....	5 hours
Algebra	5 hours
Geometry	5 hours
Physiology	5 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon

Third Term.

Trigonometry	5 hours
Algebra	5 hours
Physics	5 hours
German or French	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon

SOPHOMORE YEAR.

First Term.

Analytic Geometry	5 hours
English	3 hours
French or German	3 hours
Inorganic Chemistry	4 hours
Chemistry, laboratory work.....	2 afternoons
Elective	3 afternoons

Second Term.

Calculus	2 hours
French or German.....	3 hours
Elective	5 hours
English	5 hours
Elective, drawing or laboratory work.....	5 afternoons

Third Term.

Calculus	5 hours
Physics	5 hours
French or German.....	5 hours
English	2 hours
Physics, laboratory work.....	2 afternoons
Elective, drawing or laboratory work.....	3 afternoons

*At least thirteen hours a week (class room work) are required throughout this course.

JUNIOR YEAR.

First Term.

Physics	3 hours
Elective	8 hours
Physics, laboratory work	1 afternoon
Elective	4 afternoons
Electives :	
Logic	2 hours
Surveying	3 hours
French or German	2 hours
Geology	3 hours
Mineralogy	2 hours
Astronomy	3 hours
Biology	3 hours
Physical Geography	5 hours
English History	5 hours
General History	5 hours
Masonry Construction	3 hours

Second Term.

Physics	2 hours
Elective	10 hours
Physics, laboratory work	1 afternoon
Elective	4 afternoons
Electives :	
Descriptive Geometry	5 hours
Dynamo Electric Machinery	2 hours
Mechanics	5 hours
Theoretical Chemistry	5 hours
Biology	3 hours
Mineralogy	4 hours
Geology	2 hours
Physical Geography	5 hours

Third Term.

Elective	13 hours
Elective	5 afternoons
Electives :	
Metallurgy	4 hours
Alternate Current Machinery	2 hours
Ore Dressing	3 hours
Stereotomy	1 hour
Theoretical Chemistry	3 hours
Geology	3 hours
Physical Geography	5 hours

SENIOR YEAR.

All Elective.

ACADEMIC COURSE.

TO BE CONTINUED UNTIL JUNE 1900 ONLY.

FIRST YEAR.

First Term.

Elementary Algebra	5 hours
English—Course I.....	5 hours
General History	5 hours
Physiology	5 hours

Second Term.

Elementary Algebra	5 hours
English—Course I.....	5 hours
General History	5 hours
Physical Geography	5 hours

Third Term.

Elementary Algebra	5 hours
English—Course I.....	5 hours
General History	5 hours
Physical Geography	5 hours

SECOND YEAR.

First Term.

Geometry	5 hours
Zoology	5 hours
French or German.....	3 hours
English History	5 hours

Second Term.

Geometry	5 hours
English—Course II.....	5 hours
French or German.....	3 hours
English History	3 hours

Third Term.

Physics	5 hours
English—Course II.....	5 hours
French or German	5 hours
Psychology	3 hours

THIRD YEAR.

First Term.

Higher Algebra	5 hours
French or German	5 hours
Elementary Chemistry	4 hours
Political Economy	5 hours

Second Term.

Higher Algebra	5 hours
Logic	5 hours
Elective	5 hours

Third Term.

Trigonometry	5 hours
Civil Government	5 hours
Book-keeping (optional)	3 hours
Elective	5 hours

- Shorter special courses are offered in the following subjects :
- I. CHEMISTRY AND ASSAYING.
 - II. MINING.
 - III. ELECTRICITY.
 - IV. SURVEYING.

For further information, address
GEO. E. LADD, Director,
Rolla, Missouri.

LIST OF STUDENTS

Graduate Department.

Name.	Course.	Pos' office.	County.
Baker, John Thomas, LL. B.	Law	Gant	Audrain.....
Barth, Irvin Victor, A. B.	Acad.	Columbia...	Boone.....
Booth, Nathaniel Ogden, B. Agr.	Agr.	Columbia.....	Boone.....
Christian, George Milton, A. M.	Acad.	Ashland...	Boone.....
Conley, Milton Robards, A. B., B. L., A. M., LL. B.	Law	Columbia,....	Boone.
Conley, William Thompson, B. S.	Acad.	Columbia..	Boone.
Conran, James Francis, B. L.	"	High Hill...	Montgomery.....
Cox, Elza Allison, B. S. in C. E.	Engr.	Rutledge	Scotland
Defoe, Mrs. Cora Eitzen; B. S., M. S.	Acad.	Columbia.....	Boone.
English, George Harrison, Jr., A. B.	"	Kansas City..	Jackson.
Fleet, Robert Ryland, A. B.	"	Decatur, Tex...	
Gerig, John Lawrence, A. B.	"	Columbia.....	Boone.
Guffey, Don Carlos	"	Unionville	Putnam.....
Haydon, Curtis, A. B., LL. B.	Law	Columbia.	Boone.....
Herrenleben, Henry, B. L.	Acad.	Jamestown...	Moniteau.....
Hicks, Mrs. Verna Shelden, A. B.	"	Columbia...	Boone.....
Huggins, Gurry Elsworth, B. L.	"	Benton	Scott.....
Jackson, Clarence Martin, B. S.	"	Martinstown...	Putnam
Johnston, Eva, A. M.	"	Columbia.....	Boone.....
Jones, Mary, A. M.	"	Fayette.....	Howard.....
Knepper, Myrtle, B. L.	"	Guy.	Atchison.....
Lockwood, Marquis Hartwell, E. E.	"	Columbia...	Boone.....
Mairs, Thomas Isaiah, B. Agr.	Agr.	Columbia...	Boone.
Norton, John Henry, B. Agr.	"	Greensburg...	Knox.....
Organ, Minnie Katherine, B. L.	Acad.	Salem.	Dent.....
Riley, Lottie Marie, B. L.	"	Columbia...	Boone.
Rodhouse, Thomas Jacob, B. S. in C. E.	"	Columbia.....	Boone.
Switzler, Royall Hill, A. B.	"	Columbia...	Boone.....
Thom, Charles, A. B., A. M.	"	Minonk, Ill..	
Turner, Edwin, LL. B., B. S., B. L., A. M.	"	Mexico.....	Audrain.....
Wilson, William Frank, A. B.	"	Cape Girardeau.	Cape Girardeau.

Academic Department.

Name.	Course.	Postoffice.	County.
<i>Senior Class.</i>			
Alexander, Emmet Gerald.	A. B.	Blackburn.	Saline
Ames, Lewis Darwin.	B. L.	Chillicothe	Livingston
Bell, Charles Thomas.	A. B.	Barnard.....	Nodaway.....
Bogard, Margaret Ethel.	B. L.	Mendon.	Chariton
Brandenberger, Jacobina	B. S.	Linneus.....	Linn
Campbell, Philip Leonidas.	B. L.	Goliad, Texas	
Campbell, Laura Belle.	A. B.	Columbia.....	Boone.....
Cleary, Fred Charles.	"	Chillicothe.....	Livingston.....
Conley, Dudley Steele.	B. L.	Columbia.....	Boone.....
Depee, Emma.	A. B.	Greenfield..	Dade.....

Name.	Course.	Postoffice.	County.
Doty, Augustus Henry	B. S.	Jamesport.....	Daviess.....
Dungan, Harry McFarland.....	A. B.	Hopkins.....	Nodaway.....
Edmonds, Raymond Sautley.....	B. L.	Miami.....	Saline.. ..
Edwards, John Crockett.....	"	Centralia.....	Boone.....
Gladney, Franklin Young.....	A. B.	Auburn.....	Lincoln.....
Gordon, Daisy Lenore.....	B. S.	Columbia... ..	Boone.....
Greer, Bertha Alice.....	A. B.	Joplin.....	Jasper.....
Guffey, Don Carlos.....	B. S.	Unionville.....	Putnam.....
Harnage, Jesse Lee.....	A. B.	Tahlequah, N. M..	
Harshe, Robert Bartholow.....	B. L.	Columbia.....	Boone.....
Hawkins, Richmond Laurin... ..	A. B.	".....	".....
Henderson, John Oliver.....	"	Arcola.....	Dade.....
Howard, Thomas Perry.....	"	Parshley.....	Jasper.....
Howard, Ida Elizabeth.....	B. L.	Columbia.....	Boone.....
Kleinschmidt, Rudolph.....	"	St. Louis City..	
Kline, Mary.....	"	Bismarck.....	St. Francois.....
Miller, Camelia Maud.....	A. B.	St. Joseph.....	Buchanan.....
Moore, Ida May.....	B. L.	Perry.....	Ralls.....
Moore, Henry Stephen.....	A. B.	Oran.....	Scott.....
McFarland, Roy.....	A. B.	Monroe City.....	Monroe.....
McFarland, Byron.....	"	".....	".....
Parkhurst, Charles Leonard.....	B. S.	Sweet Springs... ..	Saline.....
Potter, Mary Bassett.....	B. L.	St. Joseph.....	Buchanan.....
Rippey, John Denise.....	A. B.	Lawson.....	Ray.....
Robertson, George Gordon.....	A. B.	Cuba.....	Crawford.....
Salmon, Merritt Kimbrough.....	A. B.	Clinton.....	Henry.....
Seward, William Henry.....	A. B.	Oakridge.....	Cape Girardeau...
Shipley, Sylvanus Carl.....	B. S.	Columbia.....	Boone.....
Sinclair, Elizabeth May.....	B. L.	".....	".....
Smith, Clyn.....	B. S.	Collins... ..	St. Clair.....
U'ley, Lee.....	B. L.	Miami.....	Saline.....
Vaughn, Ernest Vancourt.....	B. L.	Columbia.....	Boone.....
Walmsley, John Fletcher.....	A. B.	Sedalia.....	Pettis.....
Woodson, Warren Rice.....	B. L.	Montipio, Mexico..	
Wulfert, Margaret Anne.....	B. L.	Columbia.....	Boone.....

—45

Junior Class.

Anderson, John Lewis.....	A. B.	Vandalia.....	Audrain.....
Arnold, Mercer.....	B. L.	Joplin.....	Jasper.....
Barlow, Gilbert.....	A. B.	Bethany.....	Harrison.....
Bassett, Arthur.....	"	Paris.....	Monroe.....
Blaisdell, Charles Franklin.....	"	Cincinnati, Ohio..	
Deister, John Louis.....	"	Harlem.....	Platte.....
Eitzen, Meta Therese.....	B. S.	Washington.....	Franklin.....
Ficklin, Arthur Graham.....	A. B.	King City.....	Gentry.....
Freudenberger, Henry Clay.....	B. L.	Clarksburg.....	Moniteau.....
Ganson, Louis Stevens.....	A. B.	Kansas City... ..	Jackson.....
Gerig, Rosalie.....	"	Columbia.....	Boone.....
Gladney, Andrew Gaston.....	B. S.	Troy.....	Lincoln.....
Goodson, Paul.....	B. L.	Carrollton.....	Carroll.....
Gray, Mary	"	Columbia.....	Boone.....
Guitar, Emily.....	"	".....	".....
Halliburton, Westley	"	Carthage.....	Jasper.....
House, Ralph Emerson.....	"	Chamberlain, S. D..	
Jenkins, Charles Oscar.....	"	Spring Garden.....	Miller.....
Lucas, William Cardwell.....	A. B.	Osceola.....	St. Clair.....
Moore, William Dunn.....	"	St. Louis City....	
Phelps, Mabel.....	B. L.	Kirkwood.....	St. Louis.....
Price, Perry Riley.....	B. L.	Plattsburg.....	Clinton.....
Quigley, William Henry.....	A. B.	Albany.....	Gentry.....
Steele, Mary Isabel.....	B. S.	Ladonia.....	Audrain.....
Switzler, Wm. F., Jr.....	A. B.	Columbia.....	Boone.....
Thurston, Hollis Hendrix.....	B. L.	Woodlandville.....	".....
Wade, William.....	B. L.	Bolckow.....	Andrew.....

—27

List of Students

187

Name.	Course.	Postoffice.	County.
<i>Sophomore Class.</i>			
Ahrens, Anna Helen.....	B. L.	Ft. Smith, Ark....	
Anthony, Hettie Marguerite.....	"	Maryville.....	Nodaway.....
Ballard, Vassie.....	"	Kahoka.....	Clark.....
Bannister, William Daniel.....	B. S.	Monroe City.....	Monroe.....
Barnhardt, Wilford Caldwell.....	B. L.	Columbia.....	Boone.....
Baum, William Weirich.....	A. B.	Sedalia.....	Pettis.....
Becker, Amanda Frederika.....	B. S.	St. Louis City.....	
Bell, Virginia Cordelia.....	B. S.	Hatch.....	Ralls.....
Bell, Elexious Thompson.....	B. S.	".....	".....
Blairst, Irene Elise.....	B. L.	Sedalia.....	Pettis.....
Brossard, Cornelia Pierette.....	"	Kirkwood.....	St. Louis.....
Burk, Milton Clarence.....	"	Tipton.....	Moniteau.....
Burruss, Will Ledsoe.....	"	Columbia.....	Boone.....
Caldwell, Lou Belle.....	"	Slater.....	Saline.....
Dimmitt, Roy.....	B. S.	Shelbyville.....	Shelby.....
Green, Talitha Jennie.....	"	Lathrop.....	Clinton.....
Hamilton, Charles Mortimer.....	A. B.	Troy.....	Lincoln.....
Hawkins, Katherine Bell.....	"	Paris.....	Monroe.....
Hitch, Ruth Amanda.....	B. L.	Cuba.....	Crawford.....
Hook, James Arthur.....	B. S.	Columbia.....	Boone.....
Hunter, Lewis Linn.....	A. B.	Benton.....	Scott.....
Jackson, Alfa Jane.....	B. L.	Chillicothe.....	Livingston.....
Jenkins, Charles Aaron.....	"	Longwood.....	Pettis.....
Jennings, Arthur.....	A. B.	Centralia.....	Boone.....
Johnson, Carrol Allan.....	B. L.	Columbia.....	".....
Johnson, William Shereman.....	A. B.	Tuscumbia.....	Miller.....
Jones, William Henry.....	"	St. Louis City.....	
Kroesch, Samuel.....	B. L.	California.....	Moniteau.....
Lindsey, Mary Helen.....	B. S.	Lockwood.....	Dade.....
Maddox, Joseph Shelby.....	A. B.	Long Branch.....	Monroe.....
Martin, George Benjamin.....	B. L.	Smithfield.....	Jasper.....
Miller, Franklin.....	A. B.	Memphis.....	Scotland.....
Motter, Francis Marion.....	B. L.	Kirkville.....	Adair.....
McAlester, Berry.....	A. B.	Columbia.....	Boone.....
Nesbitt, Pleasant Pomeroy.....	B. S.	St. Joseph.....	Huchanan.....
Oliver, Robert Burett.....	A. B.	Cape Girardeau.....	Cape Girardeau.....
Robinson, Harry E.....	B. L.	Appleton City.....	St. Clair.....
Robinson, Roy D.....	"	".....	".....
Schafer, Frederick Charles.....	"	Lancaster.....	Schuyler.....
Scudder, William Russell.....	A. B.	Kearney.....	Clay.....
Shipley, Edith.....	"	Columbia.....	Boone.....
Steele, Asa George.....	B. S.	Ladonia.....	Audrain.....
Tate, Ernest.....	A. B.	Hallsville.....	Boone.....
Waterworth, Edward Brooks.....	"	St. Louis City.....	
<i>Freshman Class.</i>			
Alexander, Carter.....	A. B.	Paris.....	Monroe.....
Alexander, Samuel Thomas.....	B. L.	Gallatin.....	Daviess.....
Allie, Rea Haydon.....	A. B.	Olean.....	Miller.....
Ames, Mrs. Linnie Edwards.....	B. L.	Columbia.....	Boone.....
Atwood, Frank Ely.....	"	Carrollton.....	Carroll.....
Baird, Letitia Mary.....	"	St. Louis City.....	
Baker, Charles T.....	B. S.	Latour.....	Johnson.....
Bayless, Gertrude Mabel.....	"	Columbia.....	Boone.....
Beaman, Robert Luther.....	B. L.	Butler.....	Bates.....
Berkebille, Lewis.....	B. S.	Columbia.....	Boone.....
Biggs, James Paul.....	A. B.	Ashland.....	".....
Bird, Hunter Linn.....	B. L.	Cairo, Ill.....	
Bishop, Earl Jacob.....	"	Kansas City.....	Jackson.....
Black, Arthur Geiger.....	B. S.	".....	".....
Boardman, Emma.....	B. L.	Harrisonville.....	Cass.....
Roman, John Sydney.....	B. S.	Roads.....	Carroll.....
Bonham, Nellie Blanche.....	A. B.	Higginsville.....	Latayette.....

Name.	Course.	Postoffice.	County.
Bowers, William Swartz.....	B. L.	Moberly.....	Randolph.....
Braun, Frederick Augustus.....	B. S.	Raytown.....	Jackson.....
Brinkley, Milo Hamilton.....	"	Linneus.....	Linn.....
Cary, Carl Frederick.....	"	Bolivar.....	Polk.....
Cassady, Nell Beatrice.....	B. L.	Lamar.....	Barton.....
Catron, Thomas Kent.....	A. B.	Columbia.....	Boone.....
Coffer, Harry Redmond.....	B. L.	Savannah.....	Andrew.....
Cooper, Mary Lynde.....	"	Columbia.....	Boone.....
Crenshaw, Charles Robert.....	"	Lamar.....	Barton.....
Daniel, William McPike.....	A. B.	Vandalia.....	Audrain.....
Daniels, Minnie Annetta.....	B. L.	Clinton.....	Henry.....
Dashiell, Laura Henry.....	"	Princess Anne, Md.....	
Davis, Homer Jason.....	"	Miller.....	Lawrence.....
Davis, Charles Burton.....	"	Oakwood.....	Ralls.....
Deppe, Charles Alexander.....	B. S.	Glenville, Neb.....	
DeVilbiss, Edgar Frank.....	B. L.	Spring Garden.....	Miller.....
Dockery, Ethel Ardella.....	"	Kirksville.....	Adair.....
Duffy, Bessie.....	"	Clinton.....	Henry.....
Dunn, James Earl.....	B. L.	Urich.....	Henry.....
Ellis, Ethel Lydia.....	"	St. Joseph.....	Buchanan.....
Faris, John.....	"	Caruthersville.....	Pemiscot.....
Favor, Ernest Howard.....	B. S.	Springfield.....	Greene.....
Fisher, Charles Whittaker.....	"	Bolivar.....	Polk.....
Foster, Asa Dillard.....	A. B.	Spencersburg.....	Pike.....
Fountain, James Richie.....	B. L.	Centralia.....	Boone.....
Gallaher, Leo.....	B. S.	Warrensburg.....	Johnson.....
Garth, Frank Melville.....	B. L.	Clinton.....	Henry.....
Gilmore, Maurice Eugene.....	B. S.	Muscogee, I. T.....	
Groves, David Gordon.....	A. B.	Blackburn.....	Saline.....
Guinney, Felix Ernest.....	B. S.	Pierce City.....	Lawrence.....
Harrison, John Scott.....	A. B.	Bethany.....	Harrison.....
Hathaway, Bishop.....	B. L.	Stanberry.....	Gentry.....
Henderson, James Paris.....	A. B.	Chillicothe.....	Livingston.....
Henderson, Charles Forest.....	B. S.	Paris.....	Monroe.....
Hidy, Leora Mabel.....	B. L.	Columbia.....	Boone.....
Hopkins, Nelson Orlando.....	B. L.	Westboro.....	Atchison.....
Houck, George, Jr.....	"	Bloomfield.....	Stoddard.....
Houx, Samuel Bailey.....	B. S.	Warrensburg.....	Johnson.....
Howell, Shrader Preston.....	B. L.	Appleton City.....	St. Clair.....
Hurst, Frederick Ralph.....	B. S.	Kansas City.....	Jackson.....
Hutchison, Cora Lee.....	"	Sedalia.....	Pettis.....
Irvine, Ernest Albert.....	A. B.	Vandalia.....	Audrain.....
Jesse, Richard Henry, Jr.....	"	Columbia.....	Boone.....
Jewett, Ernest Woodbury.....	B. L.	Shelbina.....	Shelby.....
Johnson, William Clyde.....	A. B.	Vandalia.....	Audrain.....
Johnson, Oliver Thul.....	"	St. Louis City.....	
Jones, Loren Gilmore.....	"	Slagle.....	Polk.....
Lamm, Philip Forsyth.....	B. L.	Sedalia.....	Pettis.....
Lentz, John William.....	B. L.	Lake City.....	Jackson.....
Lilly, Ida Belle.....	"	Trenton.....	Grundy.....
Locke, Robert Hodge.....	B. S.	Lock Spring.....	Daviess.....
Marshall, Thomas Francis.....	A. B.	Blackwater.....	Cooper.....
Martin, William Wesley.....	B. S.	Doniphan.....	Ripley.....
Masters, Stanley Madison.....	B. L.	Kansas City.....	Jackson.....
Millsap, Charlie Otho.....	A. B.	Mt. Vernon.....	Lawrence.....
Moore, Olin Harris.....	"	Columbia.....	Boone.....
Morehead, Lucy Olive.....	B. L.	Paris.....	Monroe.....
Morgan, Franklin Benjamin.....	"	Lamar.....	Barton.....
Moulton, Pearl.....	"	King City.....	Gentry.....
Mullins, Roscoe Conkling.....	"	Linneus.....	Linn.....
Murphy, Selah Hart.....	B. S.	Trenton.....	Grundy.....
McBain, James Patterson.....	A. B.	Columbia.....	Boone.....
McCarthy, Grace Dietrich.....	B. L.	Carytown.....	Jasper.....
McCaslin, Strausie.....	"	King City.....	Gentry.....
McCaslin, Frank James.....	"	".....	".....
Newby, Alby Kenneth.....	B. S.	Grandin.....	Carter.....

List of Students

189

Name.	Course.	Postoffice.	County.
O'Connor, Tom Edward....	B. L.	Maryville.....	Nodaway.....
Pearcy, Elmer Egerton.....	B. L.	Thornfield....	Ozark.....
Peiffer, Herbert St. Clair.....	A. B.	Carthage.....	Jasper.....
Pettus, William Bacon.....	B. L.	Mobile, Ala.....	Lawrence.....
Potter, James Arthur.....	A. B.	Mt. Vernon.....	Boone.....
Powell, William Edward.....	B. S.	Columbia..	".....
Proctor, Lawrence Matthews ..	A. B.	Ashland.....	".....
Rabourn, Susie McDowell.....	"	Centralia.....	".....
Rabourn, Sara Brewer.....	"	".....	".....
Ramsay, Thomas Orrin	B. L.	Revere	Clark.....
Reid, Clifford Lee.....	"	Shelbina.....	Shelby.....
Riley, Horace Ralph.....	B. L.	Plattsburg	Clinton.....
Rouse, Clyde	B. S.	Brown's Station...	Boone.....
Schenk, David Jr.....	A. B.	Memphis.....	Scotland
Sedgwick, Ethell Williams.....	B. L.	Lamar	Barton.....
Shumard, Oliver Garfield...	"	Ridgeway.....	Harrison.....
Stockwell, Ralph Walden.....	A. B.	Salisbury.....	Chariton.....
Storm, Fred Erwin.....	B. L.	Maryville.....	Nodaway.....
Thurman, Hal Clark.....	"	Lamar	Barton.....
Vaughn, Edith May.....	"	Columbia.....	Boone.....
Walker, George Johnson.....	B. S.	Monroe City.....	Monroe
Wallbrunn, Maurice.....	B. L.	Chillicothe.....	Livingston
Welch, Howard.....	"	Columbia.....	Boone.....
Willhite, Benjamin Franklin ..	"	Barry.....	Platte.....
Wilson, Orville Alexander.....	"	Nevada.....	Vernon.....
Wooldridge, Estelle.....	B. S.	Harrisonville ..	Cass.....
Yunker, Blanche.....	B. L.	Louisiana.....	Pike.....
Zschirpe, Edward John.....	"	Boonville	Cooper.....

—111

Special Students.

Babb, Mrs. Clara Louise Beau-	B. L.	Columbia.....	Boone.....
champ.....	"	Memphis.....	Scotland
Baker, Ann Robnett.....	"	Cincinnati, Ohio..	Boone.....
Baumes, Sarah Jane.....	"	Columbia	".....
Belcher, Mrs. Allie Mason.....	"	".....	".....
Branham, Mrs. Camilla Switzler..	"	".....	".....
Campbell, Eulalie Gertrude.....	"	".....	".....
Christie, Mabel.....	B. L.	Kahoka.....	Clark.....
Craig, Samuel Oliver.....	"	Cyrene.....	Pike.....
Denham, Sunie Butler	"	Rocheport	Boone.....
Fellows, Mrs. Lovin Call	"	Columbia	".....
Garth, Lucy.....	B. L.	".....	".....
Harshe, Mrs. Emma.....	"	".....	".....
Hodge, William Lafayette.....	B. L.	Asherville.....	Stoddard.....
Hubbard, Arah Hamilton	"	Centralia.....	Boone.....
Iglehart, Mary Robinson.....	"	Rocheport.....	".....
Ingold, Louis.....	B. L.	Wyconda	Clark.....
Jones, Mrs. Clara Thompson.....	"	Columbia.....	Boone
Kirk, Robert Lawrence.....	B. L.	Jefferson City.....	Cole.....
Klass, Mrs. Julia A.....	"	Columbia.....	Boone.....
Lakenan, Katherine.....	B. L.	".....	".....
Liebold, Yetta.....	"	".....	".....
Mitchell, Minnie Merta	B. L.	".....	".....
Morlan, Ernest Earle.....	"	Garden City	Cass.....
McCune, Mrs. Mary.....	"	Columbia.....	Boone.....
McKnight, James Columbus La-	B. L.	Forsyth	Taney.....
fayette	"	Columbia.....	Boone.....
Norvell, Pearl Elenore	"	Huntsville	Randolph
Oliver, William Lewis.....	B. L.	Bachelor	Callaway..
Pasley, Addison Wise.....	B. L.	Mobile, Ala....	Boone.....
Pettus, Daisy Winston.....	"	Columbia.....	".....
Prewitt, Lucille	"	".....	".....
Price, Mrs. Mary Lakenan.....	"	Columbia.....	Boone.....
Reid, Robert Lee.....	"	Glenwood	Schuyler
Riphey, Jessie Maud	"	".....	".....

Name.	Course.	Postoffice.	County.
Rodhouse, Mrs. Melissa Jesse.....		Columbia.....	Boone.....
Rollins, Mrs. Curtis B.....		".....	".....
Rose, Vernon J.....	B. L.	Newton, Kansas.....	".....
Rucker, Mrs. Fannie.....		Columbia.....	Boone.....
St. Clair, Mrs. Luella Wilcox.....		".....	".....
Schaefer, Ada.....		".....	".....
Schweitzer, Elizabeth.....		".....	".....
Smith, Alfred Hannah.....	B. L.	Kirksville.....	Adair.....
Stone, Mrs. Laura Gabbert.....		Columbia.....	Boone.....
Switzler, Mrs. Ellen Runyan.....		".....	".....
Thompson, Mrs. Mary Elizabeth.....		".....	".....
Vaughn, Mrs. Emma.....		".....	".....
Weeks, Mrs. Mary Arnoldia.....		".....	".....
White, Mrs. Catherine.....		".....	".....
Willis, Mrs. Emma B.....		".....	".....
—45			
<i>Irregular Students.</i>			
Bain, Homer Judson.....	B. L.	Trenton.....	Grundy.....
Bland, William Franklin.....	"	King City.....	Gentry.....
Bouchelle, Emma Octavia.....	"	Columbia.....	Boone.....
Burkhart, Richard Willis.....	"	".....	".....
Camron, Elisha Frank, Jr.....	"	Nevada.....	Vernon.....
Cochel, Mary Alice.....	"	Columbia.....	Boone.....
Dearing, Milton Matthews.....	"	".....	".....
Dearing, Fred Maurice.....	"	".....	".....
Dobyns, Ida Dulaney.....	"	Shelbina.....	Shelby.....
Drum, Edward Livingston.....	"	Marble Hill.....	Bollinger.....
Elkins, Hallie May.....	"	Columbia.....	Boone.....
Fisher, Mary McFarlane.....	A. B.	".....	".....
Fisher, Julia Gamble.....	"	".....	".....
Graves, James Washington.....	"	Montgomery City.....	Montgomery.....
Graves, Fannie Frank.....	B. L.	".....	".....
Hall, John Chappelaar.....	"	Marceline.....	Linn.....
Hall, James Reuben.....	"	Hallsville.....	Boone.....
Hill, Samuel Matthews.....	"	Slater.....	Saline.....
Hockenbuhl, Andy Walter.....	"	Bolivar.....	Polk.....
Hutchinson, Mrs. Katherine Ventres.....	A. B.	Columbia.....	Boone.....
Jamison, Mary Elizabeth.....	B. L.	".....	".....
Johnson, Lily Morton.....	"	".....	".....
Kahn, Gussye.....	B. S.	St. Joseph.....	Buchanan.....
Kurtz, Loula Lenoir.....	A. B.	Columbia.....	Boone.....
Leavenworth, George.....	B. S.	Ste. Genevieve.....	Ste. Genevieve.....
Lohr, Tillie.....	B. L.	St. Joseph.....	Buchanan.....
Monser, Edward Lomax.....	A. B.	Columbia.....	Boone.....
McReynolds, Allen.....	B. L.	Carthage.....	Jasper.....
Nolen, Eugenia Frances.....	"	Paris.....	Monroe.....
Parman, John.....	A. B.	Polo.....	Caldwell.....
Plumb, Harve Claud.....	"	Kidder.....	".....
Potter, Peter.....	B. S.	Springfield.....	Greene.....
Read, Mary Lee.....	B. L.	Columbia.....	Boone.....
Records, Thomas Herbert.....	A. B.	Blue Springs.....	Jackson.....
Richards, Mabel May.....	B. S.	Bevier.....	Macon.....
Rodgers, Della.....	B. L.	Columbia.....	Boone.....
Schoeni, Laura Marie.....	B. S.	Rockport.....	Atchison.....
Shelby, Thomas Kelly.....	A. B.	Lexington.....	Lafayette.....
Stone, Sue Marie.....	B. S.	Columbia.....	Boone.....
Storm, Lola Maude.....	B. L.	Maryville.....	Nodaway.....
Wagner, Laura Sophia.....	"	Boonville.....	Cooper.....
Wheeler, Edwin Bennett.....	B. S.	St. Louis City.....	".....
Wilhite, Mary Joanna.....	"	Rocheport.....	Boone.....
Williams, Thomas Albert.....	"	Moberly.....	Randolph.....
Wooldridge, James Henry.....	B. L.	Boonville.....	Cooper.....
—45			

List of Students

191

Normal Department.

Name.	Postoffice.	County.
Alexander, Carter.....	Paris.....	Monroe..
Anderson, John Lewis.....	Vandalia.....	Audrain.....
Anthony, Hettie Marguerite.....	Maryville.....	Nodaway.....
Barlow, Gilbert.....	Bethany.....	Harrison.....
Beaman, Robert Luther.....	Butler.....	Bates.....
Bell, Charles Thomas.....	Barnard.....	Nodaway.....
Bogard, Margaret Ethel.....	Mendon.....	Chariton.....
Brandenberger, Jacobina.....	Chillicothe.....	Livingston.....
Campbell, Laura Belle.....	Columbia.....	Boone.....
Cleary, Fred Charles.....	Chillicothe.....	Livingston.....
Cochel, Mary Alice.....	Columbia.....	Boone.....
Cooper, Mary Lynde.....	".....	".....
Daniels, Minnie Annetta.....	Clinton.....	Henry.....
Duffy, Bessie.....	".....	".....
Edwards, John Crockett.....	Centralia.....	Boone.....
Ellis, Ethel Lydia.....	St. Joseph.....	Buchanan.....
Ficklin, Arthur Graham.....	King City.....	Gentry.....
Gerig, John Lawrence.....	Columbia.....	Boone.....
Gordon, Daisy Lenore.....	".....	".....
Graves, Fannie Frank.....	Montgomery City.....	Montgomery.....
Gray, Mary.....	Columbia.....	Boone.....
Greer, Bertha Alice.....	Joplin.....	Jasper.....
Guffey, Don Carlos.....	Unionville.....	Putnam.....
Henderson, John Oliver.....	Arcola.....	Dade.....
Howard, Ida Elizabeth.....	Columbia.....	Boone.....
Howard, Thomas Perry.....	Parshley.....	Jasper.....
Hutchison, Cora Lee.....	Sedalia.....	Pettis.....
Jenkins, Charles Oscar.....	Spring Garden.....	Miller.....
Kline, Mary.....	Bismarck.....	St. Francois.....
Kramer, John.....	Carrollton.....	Carroll.....
Locke, Robert Hodge.....	Lock Spring.....	Daviess.....
Moore, Ida May.....	Perry.....	Ralls.....
Morehead, Lucy Olive.....	Paris.....	Monroe.....
Moulton, Pearl.....	King City.....	Gentry.....
McCarthy, Grace Dietrich.....	Carytown.....	Jasper.....
McFarland, Roy.....	Monroe City.....	Monroe.....
Phelps, Mabel.....	Kirkwood.....	St. Louis.....
Richards, Mabel May.....	Bevier.....	Macon.....
Riley, Lottie Marie.....	Columbia.....	Boone.....
Robertson, George Gordon.....	Cuba.....	Crawford.....
Rodgers, Della.....	Columbia.....	Boone.....
Sedgwick, Ethell Williams.....	Lamar.....	Barton.....
Sinclair, Elizabeth May.....	Columbia.....	Boone.....
Smith, Clyn.....	Collins.....	St. Clair.....
Thurston, Hollis Hendrix.....	Woodlandville.....	Boone.....
Turner, Edwin.....	Mexico.....	Audrain.....
Wheeler, Edwin Bennett.....	St. Louis City.....	
Woodson, Warren Rice.....	Montipio, Mexico.....	
Wulfert, Margaret Anne.....	Columbia.....	Boone.....

—49

Teachers' Course.

Alexander, Charles.....	Blackburn.....	Saline.....
Amen, Ella Elizabeth.....	New Boston.....	Linn.....
Beagles, Beulah Lacy.....	Nevada.....	Vernon.....
Boner, Columbus Claude.....	Pattonsburg.....	Daviess.....
Boon, Sallie Knox.....	Carthage.....	Jasper.....
Boyd, John Orville.....	Louisiana.....	Pike.....
Briscoe, Jack.....	New London.....	Ralls.....
Browning, Marguerite.....	Moscow Mills.....	Lincoln.....
Burgher, Silvia.....	Rolla.....	Phelps.....
Carlsted, Claude.....	Cunningham.....	Chariton.....
Carroll, Edna Earl.....	Columbia.....	Boone.....
Cröse, Guy Hartwell.....	Bosworth.....	Carroll.....
Curtright, James Pleasant.....	Paris.....	Monroe.....

Name.	Postoffice.	County.
Davies, Stella	Linn ..	Osage..
Dotson, Ulysses Simpson Grant.	Lebanon ..	Laclede..
Ellis, Martha Ellen.	Columbia..	Boone..
Ferguson, Joseph Leonidas.	Fulkerson ..	Johnson..
Ferguson, Pearl ..	Houstonia ..	Pettis..
Flood, Sallie Rochester.	Columbia..	Boone..
Foster, Maud.	Memphis..	Scotland
Garvin, Lee.	Lee's Summit..	Jackson..
Hamilton, Luda Grace.	Independence..	Jackson..
Hasting, Clyde Vincent ..	Grant City ..	Worth..
Hill, Homer Ailin ..	Maple Grove ..	Jasper..
Hofmann, Lydia ..	New Haven. ..	Franklin ..
Humphreys, James Clarence..	Guthrie..	Callaway
Jackson, Mrs. Nellie Clarahan.	Columbia..	Boone..
Jesse, Charlotte ..	Mexico ..	Audrain..
Jones, Berta Coe.	Sims.	Livingston ..
Keeling, Clyde.	Nevada..	Vernon..
Kirk, Robert Lawrence..	Jefferson City..	Cole....
Lillard, Daisy Gertrude ..	Columbia..	Boone....
Lillard, Dasha.	" ..	" ..
Lillard, Belle.	" ..	" ..
Lilly, Linus Augustine.	Carrollton.	Carroll
Mattingly, Emma Florence.	Rich Hill ..	Bates ..
Mayfield, Hattie ..	Miami ..	Saline..
Middleton, Thomas Preston.	Oak Grove ..	Jackson..
McClay, Owen Alexander.	Kirbyville.	Taney ..
McCorkle, Thomas Arch.	Van Alstyne, Texas.	
McCulloch, Laura ..	Higginsville.	Lafayette..
Nichols, Mrs. Mary.	Higber.	Randolph..
Norton, Effie May ..	Sedalia ..	Pettis..
Norton, Tinnie Cordelia ..	" ..	" ..
Nowlin, Mildred Annie.	Columbia..	Boone....
Patterson, Belle Clarence.	Odessa ..	Lafayette..
Payne, Orion Leroy ..	Paris ..	Monroe....
Peters, Albert Newton..	Crane.	Stone..
Rieke, Otto Franz Andrew.	Ironton ..	Iron..
Robinson, John Beverly.	Diamond.	Newton..
Rogers, John Edgar.	Blue Mound, Kan.	
Strong, Charles Monroe ..	Miami ..	Saline....
Thompson, Mrs. Madge.	Columbia..	Boone..
Thornton, Lydia Ann.	Vandalia ..	Audrain..
Tyler, Earle Graves.	Hamburg ..	St. Charles ..
Waltz, Oscar Newton.	Centerville.	Jasper..
Whitmore, James Franklin ..	Higbee ..	Randolph..
Withers, Myra.	Piedmont ..	Wayne....

Law Department.

Name.	Postoffice.	County.
Graduate Class.		
Baker, John Thomas, LL. B.	Gant ..	Audrain..
Conley, Milton Robards, A. B., A. M., LL. B.	Columbia.	Boone..
Haydon, Curtis, A. B., LL. B.	Columbia.	Boone..
Senior Class.		
Barnes, Clarence Abel..	Mexico.	Audrain....
Barth, Irvin Victor.	Columbia.	Boone..
Bauer, Milton John.	St. Joseph.	Buchanan..
Bissett, Clyde Aigner ..	Springfield.	Greene ..
Broughton, Allen Tisdell.	Hardin.	Ray ..

List of Students

193

Name.	Postoffice.	County.
Callow, Lee.....	Oregon.....	Holt.....
Coppedge, Adam Vanburen.....	Everton.....	Dade.....
Corbett, Samuel Jefferson.....	New Madrid.....	New Madrid.....
Cottey, William Earnest.....	Knox City.....	Knox.....
Crook, James Edwin.....	Roscoe.....	St. Clair.....
Davis, Frank Asbury.....	St. Joseph.....	Buchanan.....
Doll, Ernest Easton.....	Hamilton.....	Caldwell.....
Durham, Lisbon Elwood.....	Elston.....	Cole.....
Eastin, George W.....	Kearney.....	Clay.....
Eaves, James Frank.....	Salem.....	Dent.....
Elvins, Politte.....	Doe Run.....	St. Francois.....
English, George Harrison, Jr.....	Kansas City.....	Jackson.....
Ferrell, Corry Craig.....	Halleck.....	Buchanan.....
Gardner, Preston Edwin.....	Nevada.....	Vernon.....
Goodson, Walter Conrad.....	New Cambria.....	Macon.....
Gordon, Miles Fleetwood.....	Columbia.....	Boone.....
Harris, Spencer Francis.....	Rich Hill.....	Bates.....
Henderson, George Royall.....	Columbia.....	Boone.....
Hock, William Casper.....	Buckner.....	Jackson.....
Jones, Francis Price.....	Versailles.....	Morgan.....
Knoop, Amos Albert.....	Stover.....	".....
Lee, Ilus Miller.....	Cassville.....	Barry.....
Mety, Charles Parson.....	Memphis.....	Scotland.....
Mosman, Burroughs Norton.....	St. Joseph.....	Buchanan.....
Murrell, Charles Ernest.....	Lancaster.....	Schuyler.....
McIntyre, Joe Shelby.....	Mexico.....	Audrain.....
Pickell, Ralph Miller.....	Hamilton.....	Caldwell.....
Prettyman, Charles Edward, Jr.....	Neosho.....	Newton.....
Rice, Leslie Duerson.....	".....	".....
Riphey, John Denise.....	Lawson.....	Ray.....
Robertson, Frederick Philip.....	Lathrop.....	Clinton.....
Robinson, Clark.....	Deer Park.....	Boone.....
Russell, Antoine Edward.....	Savannah.....	Andrew.....
Schofield, Madison Connell.....	Hannibal.....	Marion.....
Simmons, John Milton.....	St. Joseph.....	Buchanan.....
Smith, Harry William, Jr.....	New York City, N. Y.....	".....
Steinkamp, William Dietrich.....	St. Louis City.....	".....
Trevathan, Joseph Luny.....	Springfield.....	Greene.....
Wallace, James Samuel.....	Maud.....	Shelby.....
Wallace, William Walker.....	".....	".....
White, Crawford Elder.....	Columbia.....	Boone.....
Wilkerson, George Rappeen.....	Sedalia.....	Pettis.....
Willhite, Ethel Blanche.....	Grant City.....	Worth.....
Willhite, Amma Zilla.....	".....	".....
Zimmerman, Henry Morton.....	Moons, Ohio.....	".....
Zwick, Galius Lawton.....	Bucklin.....	Linn.....

-61

Junior Class.

Askren, Otto Oscar.....	Bolivar.....	Polk.....
Atchison, Ben Allen.....	Gower.....	Clinton.....
Bird, Daniel Ed.....	Quitman.....	Nodaway.....
Blevans, James.....	Strasburg.....	Cass.....
Burke, Marshall Eugene.....	Laclede.....	Linn.....
Cloud, Riley Ransom.....	Kansas City.....	Jackson.....
Coil, Ernest Brumfield.....	Hutchison.....	Ralls.....
Conran, James Francis.....	High Hill.....	Montgomery.....
Creason, Goodwin.....	Columbia.....	Boone.....
Cripps, David Andrew.....	Queen City.....	Schuyler.....
Cunningham, Joseph.....	Boonville.....	Cooper.....
Dawson, Watt Burruss.....	Hume.....	Bates.....
Doll, Alva Chester.....	Hamilton.....	Caldwell.....
Ferris, Scott, Jr.....	Neosho.....	Newton.....
Fitch, Martin Luther.....	Lebanon.....	Laclede.....
Fowler, Aubrey Melvin.....	Montreal.....	Camden.....
Fultz, David Lewis.....	Stanton, Va.....	".....
Ganson, Louis Stevens.....	Kansas City.....	Jackson.....

Name.	Postoffice.	County.
Gideon, Thomas Harrison.....	Springfield.....	Greene.....
Haverstick, Andrew Jackson.....	House Springs.....	Jefferson.....
Highley, Mont Frederick.....	Farmington.....	St. Francois.....
Hoar, Hobson.....	Ray.....	Andrew.....
Hunter, Silas Oak.....	Moberly.....	Randolph.....
Johnson, Crosby Chain.....	Hamilton.....	Caldwell.....
Kleinschmidt, Rudolph.....	St. Louis City.....	
Kramer, John.....	Carrollton.....	Carroll.....
Lafferty, Albert.....	Middletown.....	Montgomery.....
Lucas, William Cardwell.....	Osceola.....	St. Clair.....
Mills, Henry Winslow.....	Prairie Home.....	Cooper.....
Mitchell, Orestes.....	St. Joseph.....	Buchanan.....
Morgan, Henry Winfred.....	Watson.....	Atchison.....
Morris, David Esdres.....	Lancaster.....	Schuyler.....
McAlester, William Berry.....	McAlester, I. T.....	
McMillen, Robert Nelson, Jr.....	Marceline.....	Linn.....
McNatt, John L.....	Indian Springs.....	McDonald.....
Napton, Percy.....	Anaconda, Mont.....	
Nelson, Eugene William.....	Taylor.....	Marion.....
Roney, Thomas Jefferson.....	Webb City.....	Jasper.....
Scott, Charles Archie.....	Carrollton.....	Carroll.....
Shaefer, Herman Clyde.....	Columbia.....	Boone.....
Steele, Charles Fuller.....	Mexico.....	Audrain.....
Thompson, Harry.....	Mound City.....	Holt.....
Whitelaw, William Neill.....	Kidder.....	Caldwell.....
Willis, Berry Taylor.....	Shelbina.....	Shelby.....
Wilson, William Frank.....	Cape Girardeau.....	Cape Girardeau.....
Woodside, Gratia Evelyn.....	Salem.....	Dent.....

—46

Special Students.

Ballew, Thomas.....	Princeton.....	Mercer.....
Dinning, Louis Frank, Jr.....	De Soto.....	Jefferson.....
Jack, Otie Addison.....	Camden Point.....	Platte.....
Knie, Robert Livingston.....	Stanberry.....	Gentry.....
Smith, Philip Augustus.....	Columbia.....	Boone.....
Willis, John Samuel.....	Columbia.....	Boone.....

—6

Medical Department.

Name.	Postoffice.	County.
Austine, Charles Willett.....	Hallsville.....	Boone.....
Bishop, William Thomas.....	Herndon.....	Saline.....
Broderick, David Edward.....	Kansas City.....	Jackson.....
Burney, Robert Hickman.....	Peculiar.....	Cass.....
Clark, Manvel Thomas.....	Columbia.....	Boone.....
Cole, Willie Marvin.....	Sedalia.....	Pettis.....
DeMenil, Henry Nicholas.....	St. Louis City.....	
Dodd, Casper Swartz.....	Index.....	Cass.....
Feltz, Lawrence.....	Perryville.....	Perry.....
Forsyth, Robert Culver.....	Kirkwood.....	St. Louis.....
Guthrie, Claude.....	Gilmore.....	St. Charles.....
Hardy, Joseph Bryant.....	Waterloo, Ill.....	
Humphrey, John Dunlap.....	Eldorado Springs.....	Cedar.....
Jackson, Clarence Martin.....	Martinstown.....	Putnam.....
Martin, James Hardy.....	Ironton.....	Iron.....
Mikel, Henry Franklin.....	Columbia.....	Boone.....
Miller, James Abston.....	".....	".....
Munday, Bert.....	Canton.....	Lewis.....
McCray, Oran Delford.....	Marshall.....	Saline.....

List of Students

195

Name.	Postoffice	County.
McGaugh, Thomas Elmer.....	Richmond.	Ray... ..
Reed, Horace.....	Netherland, Tenn...	
Robinson, Robert Roy.....	Hallsville.....	Boone.....
Sanderson, George William.....	Fulton	Callaway.....
Searcy, Anna Beauregard	Woodlawn.....	Monroe.....
Smiley, Harry Herr.....	Boonville.. ..	Cooper.....
Sneed, Carl Miller.....	Centralia.....	Boone.....
Sullivan, James William.....	Mexico.....	Audrain.....
Sutton, Richard Lightburn....	Rockport.. ..	Atchison
Todd, William T.....	Paris.....	Monroe.....
Turner, William Henry	Centralia.....	Boone.....
Turner, John William.....	Hallsville.....	".....
Vaughan, Benjamin Warren..	Urbana.....	Dallas.....
Wright, Charles.....	Poplar Bluff.....	Butler.....
<i>Special Student.</i>		
Tilley, Robert Bruce.....	Waynesville.....	Pulaski.. ..

—34

College of Agriculture and Mechanic Arts.

Name.	Course.	Postoffice.	County.
<i>Graduate Class,</i>			
Booth, Nathaniel Ogden, B. Agr..	Agr.	Columbia	Boone.....
Mairs, Thomas Isaiah, B. Agr....	"	".....	".....
Norton, John Henry, B. Agr.....	"	Greensburg.....	Knox.....

—3

A. SCHOOL OF AGRICULTURE.

Name.	Postoffice.	County.
<i>Fourth Year.</i>		
Roberts, Guy Alexander.. ..	St. Joseph.....	Buchanan....
<i>Third Year.</i>		
Dix, Mara Blanche Dixie.	Jefferson City.....	Cole.....
Howard, Walter Lafayette.....	Griffin.....	Christian.
Jackson, Carrie Ruth....	Chillicothe.....	Livingston.....
Maloney, John Cornelius.....	Cretcher.....	Saline.....
<i>Second Year.</i>		
*Dickerson, George Luther	Livonia....	Putnam.....
Hayes, Lottie May.. ..	Columbia.. ..	Boone.
Lipscomb, Millard Lewis, Jr.. ..	"	"
White, James David... ..	"	"
Willoughby, Claude Leake....	"	"
<i>First Year.</i>		
Allen, Robert Riddick....	Columbia.....	Boone.....
Archibald, Claude Thomas, Jr..	Carrollton.....	Carroll.....
Bonnot, Edmond August.....	Bonnot's Mill.....	Osage.....
Brown, Fred.....	Columbia.....	Boone.....

Name,	Postoffice.	County.
Cassity, George Henry.....	Purdin.....	Linn.....
Crouch, Andrew Monroe, Jr... ..	Columbia.. ..	Boone.....
Douglas, Elmore Berett	St. Louis City.....	
Ferguson, James Taylor.....	Huntsdale	Boone.....
Frampton, Alfred Clement.....	St. Louis City.	
Hicklin, Fannie Crosthwait.....	New London.....	Ralls... ..
Hines, William Higgins.....	Eureka Springs, Ark.	
Hoag, William Bert.. ..	Mountain Grove.....	Wright.. ..
Hockaday, Irvine O., Jr	Columbia.....	Boone.....
Jesse, William Hall, Jr.....	Litwalton, Va.....	
Keenan, Dennis Michael.....	Mt. Leonard.....	Saline.....
Koch, Albert Adlebert.....	Creve Coeur.....	St. Louis
Mitchell, Donna Iza	Columbia.....	Boone.....
Mullins, William Sherman.....	Omaha.....	Putnam.....
Parkhurst, Albert Early, Jr.....	Sweet Springs.....	Saline.....
Rieke, Otto Franz Andrew.	Ironton.	Iron.....
Wolff, Emil	New Haven.....	Franklin.....
<i>Special Students.</i>		-21
Craig, Samuel O.....	Cyrene.....	Pike.....
<i>Short Winter Course in Agriculture.</i>		
Chamberlain, George William.....	Springfield.....	Greene.. ..
Daugherty, Gerard Roy.....	La Plata.....	Macon.....
Gentsh, Clemens.....	Pacific.....	Franklin
Holley, Ervine Gale	Memphis.....	Scotland.....
Lester, Dolpha Keneth.....	Harrisonville.....	Cass.....
Maloney, William James.....	Cretcher	Saline
Moree, Emmanuel Edward.	Baker... ..	St. Clair.....
McDonald, Dudley Steele.....	Savannah.. ..	Andrew.....
McDowell, George Thomas.....	Knoblick	St. Francois.....
Seeger, George Jacob.....	Creve Coeur.....	St. Louis
Speers, Frank Robert.....	Island City	Gentry.....
Wassell, Harry Franklin.....	Barry, Ill.....	
Westermann, Theodore.	St. Louis City.....	
Wing, Henry Moss.	Lamine.....	Cooper.....
Wood, Clarence.....	Hume.....	Bates.....
Young, Phylander Hyland.....	Marshall	Saline.....
<i>Short Winter Course in Horticulture.</i>		-16
Cooper, David Tobias.....	Columbia.....	Boone.....
Rieke, Otto Franz Andrew.....	Ironton.....	Iron.
		-2

*Deceased.

C. SCHOOL OF MECHANIC ARTS.

Name.	Postoffice.	County.
Alexander, Samuel Thomas	Gallatin.	Daviess.....
Bartley, John William.....	Fulton	Callaway.....
Bayne, Thomas Lee	Savannah	Andrew.....
Bird, Hunter Linn.....	Cairo, Ill.	
Calmes, Claude Monroe.....	Hardin.....	Ray
Cannell, Lowe	Hatton.....	Callaway.....
Carlisle, Thomas Jefferson	Shaw.....	Boone.....
Coleman, William Tyler.. ..	Monarch	St. Louis.....
Craig, Thomas Jefferson	Lebanon	Laclede.....

List of Students

197

Name.	Postoffice.	County.
Cramer, Walker William...	Bunceton...	Cooper
Draper, Henry Edgar	Cookville, Tenn.	
Dunn, James Earl	Urich	Henry
Garth, William Walter, Jr.	Columbia	Boone
Gordon, Hugh	Columbia	Boone
Hadelich, Oscar	Boonville	Cooper
Hahn, Charles William	Quincy, Ill	
Hann, George Washington	Independence	Jackson
Harding, James, Jr.	Jefferson City	Cole
Harrington, Edward C.	St. Louis City	
Hodgin, John Lester	New Point	Holt
Hoecker, Charles Henry	St. Louis City	
Johnson, Carroll Allan	Columbia	Boone
Lowe, Collier Alden	Mokane	Callaway
Lowry, Benedict Harrison	Walker	Vernon
Lushbaugh, Erith Evert	Fair Play	Polk
Marshall, Ernest	Clarkton	Dunklin
Marshall, Thomas Frances	Blackwater	Cooper
Miller, William Frederic	Queen City	Schuyler
Moody, Oscar D.	Columbia	Boone
Morgan, Arthur Dallas	Swartz	Vernon
McAlester, Berry	Columbia	Boone
McCaslin, Frank James	King City	Gentry
McNair, James Jamison	Sitka, Alaska	
Nelson, Wade Hampton	Newark	Knox
Parker, Robnett Prewitt	Columbia	Boone
Parker, John Milton Ferris	St. Louis City	
Ragan, Walter C.	Joplin	Jasper
Roberts, Ray	Allendale	Worth
Simon, George Julius	St. Louis City	
Sloop, Charles J.	Queen City	Schuyler
Stacy, William Alfred	New Madrid	New Madrid
Stanton, Charles David	Savannah	Andrew
Steele, Oliver Lee	Ladonia	Audrain
Story, Thomas Marmion	Revere	Clark
Vandiver, Thomas Clark	Columbia	Boone
Vogt, Emile Dudley	Ste. Genevieve	Ste. Genevieve
Waters, Roy Melvin	Vandalia	Audrain
Wells, Chester Mitchell	Huntsville	Randolph
Wolff, George, Jr.	New Haven	Franklin
Wright, Ward Ellis	Osceola	St. Clair

—50

D. SCHOOL OF ENGINEERING.

Name.	Course.	Postoffice.	County.
<i>Graduate Class.</i>			
Cox, Elza Allison, B. S. in C. E...		Rutlege	Scotland
<i>Senior Class.</i>			
Brandt, Albert Upp	E. E.	Nevada	Vernon
Corrigan, George Washington	C. E.	Harrisonville	Cass
Franz, Walter Godfrey	M. E.	St. Louis City	
Freudenberger, William Kaiser	E. E.	Windsor	Henry
Griggs, Austin B.	C. E.	Hedge City	Knox
Irvine, George Andrew	E. E.	Marshall	Saline
Keith, Charles Whiteside	C. E.	St. Louis City	
Lewis, Loyd	E. E.	Maitland	Holt
Maughner, Carl	C. E.	Kearney	Clay

Name.	Course.	Postoffice.	County.
Morse, Henry Simmons	M. E.	Warrenton.....	Warren
Neville, Colonel Will Jackson.....	C. E.	Marshall	Saline.....
Pinkley, Roy Henry.....	E. E.	Chillicothe	Livingston.....
Robinson, Ralph Waldo.....	E. E.	Kahoka.....	Clark
Terrill, Adolphus Centimus	C. E.	Macon City.....	Macon.....
Turner, Orville Hume.....	E. E.	Hallsville.....	Boone.....
Weatherly, Everett Pine.....	C. E.	Columbia.....	Boone.....
			-16
<i>Junior Class.</i>			
Bickley, Ross Moore.....	M. E.	Mexico.....	Audrain.....
Blackwell, Paul Alexander.....	C. E.	Columbia.....	Boone.....
Daugherty, Bede Allen.....	C. E.	Leemon.....	Cape Girardeau..
Gaines, Edward C.....	E. E.	Slater	Saline.
Lyman, Forest Shepard	E. E.	Kansas City.....	Jackson
Marshall, Urban Serenus.....	C. E.	St. Joseph.....	Buchanan.....
Peper, Elmer Carl.....	E. E.	St. Louis City. ....	.....
Ruffner, Charles Shumway	E. E.	Palmyra.....	Marion.....
Underhill, Dillon.....	M. E.	Lineville, Iowa...	.....
Wilson, James Newton.....	M. E.	Mexico.....	Audrain.....
			-10
<i>Sophomore Class.</i>			
Bond, Judson Baker.....	C. E.	Victor, Montana..	.....
Cooper, Isaac Benjamin.....	C. E.	Columbia.. ..	Boone.....
Dewey, Charles Edward.....	C. E.	Jefferson City.....	Cole.....
Fry, Leslie Monroe.....	C. E.	Tipton	Moniteau
Gans, Roy Carl.....	C. E.	Columbia.....	Boone.....
Maclay, Edgar Gleim.....	C. E.	Tipton	Moniteau.....
O'Rear, Lenoir Wilkes.....	E. E.	Columbia.....	Boone.....
Pierce, Lonnie John.....	E. E.	Rockport.....	Atchison.....
Powers, Joe.....	C. E.	Paris.....	Monroe.....
Shepard, Edward Lewis.....	C. E.	Joplin.....	Jasper
Smith, Edwin Dwight.....	E. E.	Maitland	Holt
Thomas, Claude Holden.. ..	C. E.	Albany... ..	Gentry.....
Winter, William Neal.....	E. E.	Greenville, Miss..	.....
			-13
<i>Freshman Class.</i>			
Allen, Clifford Lee.....	C. E.	Clinton.....	Henry.....
Barrett, Arthur.....	C. E.	Elwood	Greene
Brinkley, Milo Hamilton.....	C. E.	Linneus.....	Linn.....
Brown, Albert Gourley.....	C. E.	St. Joseph.....	Buchanan.. ..
Brundige, John Alvin	E. E.	Adrian	Bates.....
Burroughs, Robert Leslie.....	C. E.	Columbia.. ..	Boone.....
Don Carlos, Henry Carter.....	E. E.	Clarksburg.....	Moniteau
Fry, Francis Luther.....	E. E.	Tipton.....	Moniteau.....
Gay, Harry Clander.....	M. E.	Bevier.....	Macon
Gordon, Hugh	C. E.	Columbia.....	Boone.....
Halley, Thomas Alexander.....	C. E.	Whiteside.....	Lincoln.....
Hanly, Hunter Wardlow.....	M. E.	Shelbina	Shelby.....
Hauser, Orville Rice.....	E. E.	Richmond.....	Ray.....
Heck, Walter Gerald.....	M. E.	Columbia.....	Boone.....
Heck, Kirby Scott.....	E. E.	Columbia.....	Boone.....
Howard, Thomas Perry.....	C. E.	Parshley	Jasper.....
Jeffries, Paul Burch.....	E. E.	Shaw	Boone.....
Liggett, Ernest Cuthbert.....	E. E.	Wheatland	Hickory.....
Morehead, George Lawrence.....	M. E.	Paris.....	Monroe.....
Morse, Wort Stephen.....	M. E.	Warrenton	Warren.....
McCarroll, Guy Carleton.....	E. E.	Independence.. ..	Jackson.....
Peeler, James Earnest.....	E. E.	White's Store.....	Howard.....
Ragan, Walter C.	C. E.	Joplin	Jasper.....
Rautenstrauch, Walter.....	E. E.	Sedalia.....	Pettis.....
Robertson, Gay Aufricht.....	M. E.	Gallatin.....	Daviess
Salmon, John McClure.....	C. E.	Cassville	Barry.....

List of Students

199

Name.	Course.	Postoffice.	County.
Smith, Earl Brinton.....	M. E.	Cambria, Iowa....	.....
Stilwell, Tom Kennan Price.....	E. E.	Sedalia.....	Pettis.....
Super, Irvine Paul.....	C. E.	St. Louis City....	.....
Troy, George Conrad.....	C. E.	Slater.....	Saline.....
Welch, Austin Hubbard..	M. E.	Columbia..	Boone.....
Williams, Thomas Albert.....	C. E.	Moberly.....	Randolph.....
Wilson, John Thomas.....	C. E.	Memphis.....	Scotland.....
Wood, Charles Wayne.....	E. E.	Boles.....	Franklin.....
—84			
<i>Special.</i>			
Arnett, Vallandingham	M. E.	Columbia.....	Boone..

School of Mines.

Name.	Course.	Postoffice.	County.
<i>Graduate Students</i>			
Barker, Ralph.....	.....	Chicago, Ill.....	.....
Budrow, Lester R.....	.....	Zacatecas, Mexico.	.....
Buskett, Evans.....	.....	Rolla.....	Phelps.....
Dean, George W. ....	.....	Elk Prairie.....	Phelps.....
Herdman, Geo. W.....	.....	Rolla.....	Phelps.....
Ross, Beauregard.....	.....	Cameron.....	DeKalb.....
Terrell, Arthur D.....	.....	Holden.....	Johnson.....
—7			
<i>Seniors.</i>			
Bierbaum, Edward Charles.....	C. & M.	Monona, Iowa....	.....
Clark, George Clough.....	M. E.	Leadville, Colo....	.....
Hatchett, Roger Hanson.....	C. & M.	New Florence. ...	Montgomery.....
Hendricks, James Otto.....	C. E.	Bolivar.....	Polk.....
Perkins, Fred Hough.....	M. E.	Kansas City.....	Jackson.....
Perkins, Edwin Thompson..	M. E.	Kansas City.....	Jackson..
Rogers, Herbert Fordycell.....	C. & M.	Holden .	Johnson.....
Soest, Walter Ernest.....	C. & M.	.....	Phelps.....
Schulze, Herman Otto.....	M. E.	Vetschau, Germ'ny	.....
Tayman, Francis Joseph.....	C. E.	Lebanon.....	Laclede.....
Taylor, Joshua Howard.....	C. E.	Abbingdon, Ill.....	.....
Underwood, Jerrold Roscoe...	M. E.	Kansas City.....	Jackson. .
—12			
<i>Juniors.</i>			
Barber, Frank Sturns.....	M. E.	Kansas City.....	Jackson..
Chamberlain, Santiago.....	M. E.	Monterey, Mexico.	.....
Creveling, DeWitt..	M. E.	Clayton.....	St. Louis.
Coffer, Robert Henry.....	C. E.	Savannah.....	Andrew.....
Connor, Naisi Ainli.....	C. & M.	New York City....	.....
Drennan, Ralph W. W.....	C. & M.	Kansas City.....	Jackson.....
Fach, Charles Albert.....	M. E.	St. Louis City....	.....
Fraizer, Isaac Peter.....	C&M, ME	Rolla.....	Phelps ...
Fernandez, Abraham.....	M. E.	Monterey, Mexico.	.....
Garcia, John Adrian.....	M. E.	St. Louis City....	.....
Jamison, Claude Egan.....	C. E.	Rolla.....	Phelps.....
Leivy, Benj. Pasha.....	M. E.	East St. Louis, Ill.	.....
Lund, Albert E.....	C. & M.	White Oaks, N. M.	.....
Rolufs, Rulof Theo.....	M. E.	Newberg.....	Phelps ..
Seifert, Charles George.....	C. & M.	Joplin.....	Jasper .
Villareal, Francis.....	M. E.	Monterey, Mexico.	.....
Weigel, William Melvin..	M. E.	Memphis, Tenn....	.....
Wilson, A. Dyke.	M. E.	Kansas City.....	Jackson.....
—18			

Names.	Course. ^o	Postoffice.	County.
<i>Sophomores.</i>			
Buckby, DeNard W.....	M. E.	Philadelphia, Pa..	.....
Brucher, Louis.....	M. E.	Rolla.....	Phelps.....
Draper, James C.....	M. E.	Lebanon.....	Laclede.....
Donahoe, Daniel Francis.....	C. E.	Rolla.....	Phelps.....
Fitz, John C. H.....	C. & M.	Lynn, Mass.....	.....
Garrett, L. Ellis.....	G. S.	Maryville.....	Nodaway.....
Gonzales, Eduardo P.....	M. E.	Monterey, Mexico..	.....
Hannah, Harry Dalton	M. E.	Greenton.....	Lafayette.....
Hanley, Herbert R.....	M. E.	Chicago, Ill.....	.....
Higgins, Louis L.....	M. E.	Leeton.....	Johnson.....
Luther, Walter A.....	M. E.	St. James.....	Phelps.....
Martinez, Carlos E.....	M. E.	Saltillo, Mexico....	.....
Mortland, Herbert E.....	M. E.	Hardin, Ill.....	.....
Olmsted, George L.....	C. & M.	Kansas City.....	Jackson.....
Powell, Walbridge J.....	M. E.	Rolla.....	Phelps.....
Reid, John Weir.....	M. E.	Memphis, Tenn.....	.....
Stauber, Ignatius H.....	M. E.	Brookville, Kan....	.....
Southgate, John McKnight.....	M. E.	Rolla.....	Phelps.....
Watkins, James T.....	M. E.	Ennis, Texas.....	.....
Wallace, Hubbe R.....	M. E.	Webb City.....	Jasper.....
Wallace, Charles.....	M. E.	Lebanon.....	Laclede.....
Weidner, Frank.....	M. E.	Dixon.....	Pulaski.....
—22			
<i>Freshmen.</i>			
Brown, Bruce H.....	M. E.	Troy, Ill.....	.....
Cale, DuTro C.....	M. E.	St. Louis City....	.....
Case, William R.....	M. E.	Lebanon.....	Laclede.....
Carpenter, R. W.....	M. E.	St. James.....	Phelps.....
Faulkner, Robert T.....	M. E.	Rolla.....	Phelps.....
Faulkner, James Porter....	M. E.	Rolla.....	Phelps.....
Grover, Frank S.....	M. E.	Cuba.....	Crawford.....
Hall, John L.....	M. E.	Freuta, Colo.....	.....
Keene, Walter McA.....	M. E.	Denver, Colo.....	.....
Macklind, Thomas.....	M. E.	St. Louis City....	.....
McMahon, William.....	M. E.	Butte, Mont.....	.....
McTighe, Claude M.....	M. E.	Memphis, Tenn.....	.....
McTighe, Wm. A.....	M. E.	Memphis, Tenn.....	.....
Mortland, Earnest A.....	C. E.	Hardin, Ill.....	.....
Morgan, John H.....	M. E.	Rolla.....	Phelps.....
Moore, Henry C.....	M. E.	St. James.....	Phelps.....
Morris, Edwin J.....	M. E.	Rolla.....	Phelps.....
Norton, Benj. N.....	M. E.	Sedalia.....	Pettis.....
Nemnich, Otto H.....	C. E.	Florissant.....	St. Louis.....
Persons, James.....	M. E.	Butte, Mont.....	.....
Pickles, James L.....	M. E.	De Soto.....	Jefferson.....
Rogers, Charles B.....	M. E.	Neosho.....	Newton.....
Schaberg, Benj.....	M. E.	Clayton.....	St. Louis.....
Todd, Harry D.....	C. E.	St. Joseph.....	Buchanan.....
Whitaker, Fred.....	M. E.	Durango, Colo.....	.....
—25			
<i>Specials.</i>			
Chamberlain, Louis.....	Chem.	Rolla.....	Phelps.....
Christie, Louis P.....	C. & A.	Butte, Mont.....	.....
Colley, Hylton.....	Chem.	Auckland, New Zealand	.....
Curtis, Leslie V.....	C. & A.	St. Louis City....	.....
Davis, Frank J.....	C. & M.	St. Lake City, Utah	.....
Fish, F. T.....	M. E.	Davenport, Iowa..	.....
Hauber, Mathias, Jr.....	C. & M.	Grant City.....	Worth.....
Hasler, Thomas Allan.....	Chem.	Springfield.....	Greene.....
Harrison, Carrol.....	C. & M.	Rolla.....	Phelps.....
Heller, Robert.....	M. E.	Roila.....	Phelps.....

List of Students

201

Names.	Course.	Postoffice.	County.
Hoyt, H. C.....	C. & A.	Joplin.....	Jasper.....
Holman, Thomas H.....	Surv'ng	Caledonia.....	Washington.....
Johnson, J. S.....	As'y'ng	Kaufman, Texas..	
Johnson, Wm.....	C. & M.	Rolla.....	Phelps.....
Jewell, Adellon.....	Chem.	Dillon..	Phelps.....
Lewis, R. W.....	Surv'ng	Johnstown, Pa...	
Love, Clarence.....	M. E.	Rolla.....	Phelps... ..
Martinez, Louis D.....	M. E.	Saltillo, Mexico...	
Menough, Walter S.	C. E.	Wellsville, Ohio...	
Mitchell, Maude B.....	Lang.	Rolla.....	Phelps.....
Millard, Homer S.....	Lang.	Houston.....	Texas.
Seay, Minnie G.....	Lang.	New York, N. Y..	
Trotter, James F.....	M. E.	Ouray, Colo.....	
Walker, Robert F.....	Math.		Phelps.....
Webb, Ray H.....	C. & M.	Sioux City, Iowa..	
Welch, James L.....	M. E.		Phelps.....
Scott, Lewis L.....	M. E.	Rolla.....	Phelps.....
—27			
<i>Academic.</i>			
Anson, Hattie..		Rolla.....	Phelps.....
Brene, Flora.....		Dillon.....	Phelps.....
Cox, Kathrine.....		Rolla.....	Phelps.....
Dickerson, Bessie M.....		Rolla.....	Phelps.....
German, Mabel.....		Rolla.....	Phelps.....
Heller, Mariam L.....		Rolla.....	Phelps.....
Hooker, Ethel.....		Vest.....	Phelps.....
Holman, W. V.....		Lebanon..	Laclede.
Hutchinson, Leslie.....		Rolla.....	Phelps.....
Knapp, Arthur B.....		Rolla.....	Phelps.....
Owens, Blanche.....		Rolla.....	Phelps.....
Phariss, Lulu.....		Rolla.....	Phelps.....
Scott, Ethel M.....		Rolla.....	Phelps.....
Scott, Dennis.....		Rolla.....	Phelps.....
—14			

Summer School.

(L=Latin, Gr=Greek, G=German, Fr=French, M=Mathematics, E=English, B=Biology, P=Physics, S=Shopwork, Ba=Bacteriology.)

Name.	Studies.	Postoffice.	County.
Alexander, Samuel Thomas.....	L&E	Gallatin.....	Daviess.....
Alexander, Ernest Gerald.....	Fr&G	Blackburn.....	Saline.....
Ames, Mrs. Linnie Edwards.....	L	Centralia.....	Boone.....
Amsden, Minnie Lois.....	L&M	Carthage.....	Jasper.....
Anderson, John Lewis.....	Fr&G	Columbia.....	Boone..
Ankeney, John Sites, Jr.....	S	Des Moines, Iowa	
Arthur, Sylvester Irvin.....	P&B	Union City, Ind ..	
Barney, Hawley Nathan.....	Ba	Chillicothe....	Livingston.....
Becker, Amanda F.....	Fr	St. Louis City.....	
Bell, Charles Ernest..	B	Greenfield.....	Dade.....
Blackwell, Paul Alexander.....	M	Columbia.....	Boone.
Bogard, Margaret Ethel.....	Fr&G	Mendon.....	Chariton.....
Booth, Nathaniel Ogden.....	Ba	Columbia...	Boone.....
Brunner, Beulah May.....	P&L	Luella, Okla.....	
Bruton, Arthur.....	B&S	Centralia..	Boone..
Bryan, Mary Winnifred.....	M&E	Carthage.....	Jasper.
Bush, Aubrey Charles.....	P	Columbia.....	Boone.....
Campbell, Laura Belle.....	Fr	".....	".....
Carpenter, Edna.....	M&L	Windsor.....	Henry.....
Cassell, Beverly Browne.....	B	Belton .	Cass.....

Name.	Course.	Postoffice.	County.
Chapman, William Marvin..	L, E&B	Bourbon.....	Crawford.....
Conley, Dudley S.....	G	Columbia... ..	Boone.
Cooper, Joseph Quintin.....	B	"	"
Cooper, Harry Bryant.....	Ba	Carrollton.....	Carroll.
Creason, Goodwin.....	P, E&Fr	Columbia.....	Boone.....
Cullen, Elizabeth Maria..	E&S	Louisiana.....	Pike.....
Dayhoff, Grace.....	P, L&B	Lathrop.....	Clinton.....
Depee, Emma.....	M&Fr	Greenfield.....	Dade.....
Deppe, Charles Alexander ..	P&M	Glenville, Neb....	
Duff, Alexander Wallace..	P&L	Millwood.....	Lincoln.....
Edwards, John Crockett.....	Fr	Centralia.. ..	Boone.....
Eitzen, Meta Theresa.....	M&P	Washington.....	Franklin.....
Elliott, Edwin.....	"	Perry.....	Ralls.....
Elliott, Charles Henry.....	"	Alberta.. ..	Henry
Ferguson, Ray.....	Ba	Wellington, Kan..	
Ferguson, Joseph Leonidas.....	L, E&G	Fulkerson.....	Johnson.....
Fisher, Charles Whittaker.....	M&P	Bolivar.. ..	Polk.....
Fleet, Robert Ryland.....	P&S	Decatur, Texas....	
Flynt, William Richard..	P&L	Hallsville.....	Boone.....
Ford, Thomas Benjamin..	Gr	Harris.....	Sullivan.....
Fountain, James Richie.....	L&E	Centralia.....	Boone.....
Ginnings, Robert Meade.....	B	Kirksville.....	Adair.. ..
Gladney, Franklin Young.....	G	Auburn..	Lincoln.. ..
Gordon, Daisy Lonore.....	Fr	Columbia.. ..	Boone.....
Graves, Lydia Cochran..	P&L	Woodlandville....	"
Graves, Lula.....	M	"	"
Gwinn, Joseph Marr.....	P	Joplin.... ..	Jasper.....
Hall, Frank Johnson.....	Ba	Kansas City.....	Jackson.
Harrison, Cora.....	G	Bethany.....	Harrison.....
Harshe, Robert Bartholow.....	B	Columbia.....	Boone.....
Hawkins, Katherine Bell ..	L, M&Gr	Paris.....	Monroe.....
Howard, Ida Elizabeth	Fr	Columbia.. ..	Boone.....
Hunt, Alphonso Lamartine.....	Ba	Kansas City.....	Jackson.....
Huston, William Jefferson..	P&M	Hortense.....	Henry.....
Jackson, Clarence Martin.....	Ba	Martinstown	Putnam.....
Jennings, Trusten Polk..	L	Lee's Summit....	Jackson.. ..
Johnson, Oliver Thul.....	E&S	St. Louis City....	
Kelsey, Fred.....	E	Garden City.....	Cass.....
Kinkhorst, Lena,....	L&P	Brunswick.....	Chariton
Kline, Mary.....	Fr	Bismarck.....	St. Francois.....
Lamb, Charlie.....	M&P	Cairo.....	Randolph.....
Licklider, Thomas Eliel.....	P&B	Creve Coeur.....	St. Louis.....
Lilly, Joseph Campbell.....	P&M	Levick's Mill.	Randolph.....
Lockwood, Frank Leroy.....	L	Columbia.....	Boone.....
Long, Ona....	E	Kansas City.	Jackson.....
Longenecker, Oscar M.....	Ba	Paola, Kan.....	
Maddox, Joseph Shelby..	B&Gr	Long Branch.....	Monroe.....
Major, John William McGarvey...	Fr&Gr	Kansas City.....	Jackson.....
Melara, Policarpo.	E&S	Juticalpa, C. A....	
Mikel, Henry Franklin.....	B&Ba	Columbia.....	Boone.....
Moore, Edna Earl.....	P&B	Lathrop.....	Clinton.....
Moore, John W.....	Ba	Iconium.....	St. Clair.....
Motter, Francis Marion.....	G	Kirksville.....	Adair.....
Munday, Bert.....	Ba	Canton.....	Lewis.....
McAlester, Berry	Fr	Columbia.....	Boone.....
McAlester, James.....	L	"	"
McClement, Kate	E	Bethany.....	Harrison.....
McCullough, Howard Reno.....	L	Kossuth, Iowa	
Nesbitt, Florence.....	M&I.	St. Joseph.....	Buchanan.....
Newby, Alby Kenneth.	P&B	Grandin.....	Carter.....
Nolen, Eugenia Frances	G	Paris	Monroe.....
Nottingham, Laura.....	P&S	Macon	Macon
O'Rear, Miranda Allen.....	L&P	Centralia.....	Boone.
Ornduff, Ida Caroline..	P, M, E&S	Carthage.....	Jasper.....
Owen, Frederick Benjamin.....	M, E, B, Fr	Clinton.....	Henry.....
Palmer, William Lewis.	B&S	Independence.....	Jackson...

Name.	Course.	Postoffice.	County.
Pasley, Addison W.....	Gr	Columbia..	Boone.....
Payne, Mary Caroline.....		High Point.....	Moniteau.....
Ramsey, Thomas Orrin.....	M&L	Revere.....	Clark.....
Records, Thomas Hubert.....	G	Blue Springs.....	Jackson.....
Rector, Richard.....	M, L&B	Republic.....	Greene.....
Rood, Lee Wilson.....	P&L	Williamsburg.....	Callaway.....
Rouse, Clyde.....	B	Brown's Station...	Boone.....
Ruffner, Charles Shumway.....	M&P	Palmyra.....	Marion.....
Russum, Sarah Lizzie.....	M, P, S&B	Jasper.....	Jasper.....
Sansberry, Perry Oliver.....	P, L, S&B	Thompson.....	Audrain.....
Schneider, Kate.....	E&B	St. Louis City.....	
Scott, John William.....	B	Canton.....	Lewis.....
Sheppard, Charles Clinton.....	M&P	Grandin.....	Carter.....
Shikles, James Wallace.....	L.M.E.B	Plattsburg.....	Clinton.....
Simon, George Julius.....		St. Louis City.....	
Sinclair, Elizabeth May.....	Fr	Columbia.....	Boone.....
Starr, John Fletcher.....	Ba	Butler.....	Bates.....
Stevens, Wyandotte James...	S	Ottawa, Ill.....	
Switzler, Wm. F., Jr.....	Fr	Columbia.....	Boone.....
Taylor, William Edward.....	Ba	Ohio.....	St. Clair.....
Thompson, Guy Atwood.....	B&Fr	Pattonville.....	St. Louis.....
Thompson, William Charles....	P&L	Milan.....	Sullivan...
Thompson, Charles Dugan.....	L	Knob Noster.....	Johnson.....
Waltz, Oscar Newton.....	L.M.P.B.	Carthage.....	Jasper.....
Welch, Austin Hubbard.....	P, B&S	Columbia.....	Boone.....
Whealdon, Albert D.....	P, B&G	Caldwell, Ohio....	
White, Crawford Elder.....	E	Columbia.....	Boone.....
Williams, Susanna.....	B	Kirkwood.....	St. Louis.....
Winders, James Calvin.....	M&L	Callao.....	Macon.....
Winter, William Neal.....	P&M	Greenville, Miss...	
Withers, John Thomas.....	L	Poplar Bluff.....	Butler.....
Wulfert, Margaret Ann.....	Fr	Columbia.....	Boone.....
Young, Austin Gillett.....	B&S	Buxton, Texas....	

SUMMARIES.

I. Enrollment in Academic Studies.

(a) Columbia:			
English	412	Mathematics	456
Latin	195	Astronomy	41
Greek	118	Physics	215
Classical Archaeology.....	63	Chemistry	174
Romance Languages.....	215	Geology and Mineralogy.....	80
Germanic Languages.....	201	Biology	153
History and Political Economy.	242	Elocution	88
Philosophy	66		
(b) Rolla:			
Mathematics	110	English	43
Chemistry	82	Modern Languages.....	49
Physics	82		

II. Enrollment in Technical Studies.**(a) Columbia:**

Bacteriology	23	Physiology	53
Drawing	128	Entomology	18
Shop-work	120	Book-keeping and Stenography.	65
Veterinary Science	19	Horticulture	21
Agriculture	52	Pathology	11
		Pedagogy	95

(b) Rolla:

Drawing	77	Physical Laboratory	44
Shop-work	24	Chemical Laboratory	82
Mining and Metallurgy	80	Engineering	92

III. Enrollment in Departments.

I. GRADUATE:		VIII. A. AND M. COLLEGE:	
Total	31	(a) Agriculture:	
II. ACADEMIC:		Fourth Year	1
Seniors	45	Third Year	4
Juniors	27	Second Year	5
Sophomores	44	First Year	21
Freshmen	111	Specials	1
Specials	48	Short Course (Agriculture)	16
Irregular	45	Short C'se (Horticulture)	2
Total	320	Total	50
III. NORMAL:		(b) Mechanic Arts	50
Regular	58	(c) Engineering:	
Teachers' course	58	Graduate	1
Total	116	Seniors	16
IV. LAW:		Juniors	10
Graduates	3	Sophomores	13
Seniors	51	Freshmen	34
Juniors	46	Special	1
Specials	6	Total	75
Total	106	IX. SCHOOL OF MINES (ROLLA):	
V. MEDICAL	34	Graduates	7
VI. MILITARY SCIENCE AND		Seniors	12
TACTICS	239	Juniors	18
VII. ELOCUTION	88	Sophomores	22
		Freshmen	25
		Specials	27
		Academics	14
		Total	125

IV. Enrollment in Academic Courses.

	A. B.	B. L.	B. S.
Seniors	21	17	7
Juniors	12	12	8
Sophomores	15	19	10
Freshmen	26	59	26
Totals	74	107	46

V. Enrollment in Engineering Courses.

(a) Columbia:		(b) Rolla:	
Civil Engineering.....	33	Mining Engineering.....	73
Mechanical Engineering....	14	Civil Engineering.....	10
Electrical Engineering.....	27	Chemistry and Metallurgy...	22
		General Science.....	3

VI. Students Working in Gymnasium.

Men	178	Women	50
-----------	-----	-------------	----

VII. Young Men and Young Women.

(a) Columbia:			
Regular session:		Summer School:	
Men	532	Men	85
Women	164	Women	84
(b) Rolla:			
Men	113	Women	12
Total, Young Men.....	730	Total, Young Women.....	210
Number of Individual Students.....		940	

VIII. Total Enrollment.

Graduate Students	31
Academic	320
Law	106
Medical	34
Normal	116
A. & M. College: 1. Agriculture and Mechanic Arts..	98
2. Horticulture.....	2
3. Engineering.....	75
School of Mines.....	125
Summer School.....	119
Total	1026
Names counted twice.....	86
Total number of individual students.....	940
Total number at Columbia.....	815
Total number at Rolla.....	125

IX. Counties Represented in the University.

Adair	5	Lincoln	7
Andrew	8	Linn	9
Atchison	6	Livingston	10
Audrain	19	McDonald	1
Barry	2	Macon	7
Barton	6	Marion	4
Bates	7	Mercer	1
Bollinger	1	Miller	4
Boone	192	Moniteau	9
Buchanan	17	Monroe	20
Butler	2	Montgomery	5
Caldwell	7	Morgan	2
Callaway	7	New Madrid	2
Camden	1	Newton	5
Cape Girardeau	4	Nodaway	7
Carroll	10	Osage	2
Carter	3	Ozark	1
Cass	10	Pemiscot	1
Cedar	1	Perry	1
Chariton	5	Pettis	13
Christian	1	Phelps	42
Clark	7	Pike	6
Clay	4	Platte	2
Clinton	8	Polk	8
Cole	4	Pulaski	2
Cooper	10	Putnam	6
Crawford	4	Ralls	8
Dade	6	Randolph	8
Dallas	1	Ray	5
Davless	6	Ripley	1
DeKalb	1	St. Charles	2
Dent	3	St. Clair	10
Dunklin	1	St. Francois	5
Franklin	7	Ste. Genevieve	2
Gentry	10	St. Louis	12
Greene	9	Saline	22
Grundy	3	Schuyler	7
Harrison	5	Scotland	8
Henry	11	Scott	2
Hickory	1	Shelby	8
Holt	5	Stoddard	2
Howard	3	Stone	1
Iron	2	Sullivan	2
Jackson	32	Taney	1
Jasper	23	Texas	1
Jefferson	3	Vernon	8
Johnson	9	Warren	2
Knox	4	Washington	1
Laclede	8	Wayne	1
Lafayette	5	Worth	6
Lawrence	4	City of St. Louis	31
Lewis	3		

Number of counties represented (including City of St. Louis)..... 103

Number of counties not represented..... 12

X. States, Territories and Foreign Countries.

Alabama	2	Ohio	5
Arkansas	2	Pennsylvania	2
Colorado	6	South Dakota	1
Illinois	13	Tennessee	6
Indiana	1	Texas	6

STATES, TERRITORIES AND FOREIGN COUNTRIES—Continued.

Iowa	6	Utah	1
Kansas	6	Virginia	2
Kentucky	1	Indian Territory	3
Maryland	1	Mexico	8
Massachusetts	1	New Mexico	1
Mississippi	2	Oklahoma	1
Missouri	847	Alaska	1
Montana	5	Central America	1
Nebraska	2	Germany	1
New York	3	New Zealand.....	1
Total represented		30	

DEGREES CONFERRED

By the University (not including honorary degrees) during its history:

(E.E=Electrical Engineer, M.E=Mechanical Engineer, Min.E=Mining Engineer.)

A. B.....	348	M. S.	51	†B. D.....	14	C. E.	102
B. S.	257	†M. L.	3	LL. B.....	615	†T. E.	39
B. L.	116	†Ph. M.	5	M. D.	493	E. E.	6
†Ph. B.	22	†A. D. M....	1	LL. M.....	7	Min. E.	30
†A. D. B.....	7	B. P.	127	B. Agr.....	36	M. E.	0
A. M.	95	†N. G.....	12	M. Agr.....	3	Ph. D.	0

Total number of degrees granted	2,394
Deduct for names counted more than once (persons taking two or more degrees).....	420

Total number of individuals receiving degrees up to January, 1899.....1,974

†Degrees no longer offered.

GRADUATES OF 1898.

(a) COLUMBIA, MISSOURI.

I. CERTIFICATES.

Department of Military Science and Tactics.

Gilbert Lawrence Cashlon, <i>cum laude</i> .	William Dunn Moore.
Edward Andrew Briscoe.	Jesse Mordecai Owen.
Leutellus Cunningham.	Charles Leonard Parkhurst.
Arthur Duvall.	Charles Shumway Ruffner.
	Wallace Robertson Tindall.

Normal Department.

Charles Aaron Jenkins.	Allen McReynolds.
Gussye Kahn.	Reuben William Fugitt.

II. DEGREES.

*Department of Engineering.*1. *Degree of Bachelor of Science in Civil Engineering (B. S.).*

Thomas Benton Marbut, <i>cum laude</i> .	Edward Horace Jones.
Elza Allison Cox.	William Henry Turner.

2. *Degree of Bachelor of Science in Electrical Engineering (B. S.).*

Karl Henry Hansen.	Albert Haskell Rhett.
Charles William Hogan.	
(U. S. Volunteers.)	

*Department of Medicine.**Degree of Doctor of Medicine (M. D.).*

Jurney Hubert Holman, <i>cum laude</i> .	Edwin Elgin Evans.
Frank Henderson Norwood, <i>cum laude</i> .	Reverdy Johnson Gordon.
Henry Holcomb Rutherford, <i>cum laude</i> .	Hans Christian Johnson.
Harry Irving Lewis Shaefer, <i>cum laude</i> .	Alonzo Conduit Lillard.
Francis Withers Allen.	Archie Maupin Marshall.
	Charles Chandler Parmer.
	William Hamilton Reynolds.
	Douglas Scott Scrivener.

Department of Law.

Degree of Bachelor of Laws (LL. B.).

James Samuel Montgomery Houston, <i>magna cum laude</i> .	Seebert Granberry Jones.
Guy Atwood Thompson, <i>magna cum laude</i> .	Otis Wilbra Joslyn.
Harvey Dill Dow, <i>cum laude</i> . (U. S. Volunteers.)	Oliver Winfield Killam.
Samuel Reeves Halstead, <i>cum laude</i> .	Robert Lawrence Kirk. (U. S. Volunteers.)
James Columbus Lafayette McKnight, <i>cum laude</i> . (U. S. Volunteers.)	Paul Duane Kitt.
Edward Nelson Robinson, <i>cum laude</i> .	Frank B. Klepper.
John Thomas Baker.	Martin Peter Lyons.
Charles Witherspoon Bente.	Ira Gilbert Madden.
David Anderson Blanton.	John Leslie Fennell McBride. (U. S. Volunteers.)
Lloyd Webster Booher.	John Vincent Nebel.
John Newton Booth.	Jesse Mordecai Owen. (U. S. Volunteers.)
Richard Beldon Bridgeman.	Charles Flagg Paxton.
Phillip Elias Briscoe.	Everett Eugene Phillips.
Gilbert Lawrence Cashion.	John Lawrence Plowman.
Edward M. Catron.	Ernest Bell Powell.
Milton Robards Conley.	Leonard Gamble Ryland.
Floyd Bruce Cramer.	James Web Schwabe.
William Calvin Crawford.	Edward Lee Shepherd. (U. S. Volunteers.)
Robert Hugh Davis.	Orrillis Edward Shultz.
Elsus Enoch Duley.	Earl Easley Sidebottom.
Samuel S. Dunham.	Walter Alonzo Thurston. (U. S. Army.)
Arthur Duvall.	John Ernest Tiedemann.
Edward Richard Hamilton.	William Eugene Tompkins.
Frank Gaines Harris.	Martin Ernest Turner.
Curtis Haydon.	Frank Harvey Walkup.
Robert Absalom Higdon.	Charles Pinckney Wilkson.
Edward Reed Johnson.	Joseph Vance Willhite.

College of Agriculture and Mechanic Arts.

Degree of Bachelor of Agriculture (B. Agr.).

Walter William Lewelling. (U. S. Volunteers.)	Joseph Lewis McDermott.
--	-------------------------

Normal Department.**Diplomas and Life Certificates.**

Laura Craig Blackwell.
 Lena Chattan Botts.
 Aubrey Charles Bush.
 Stephen Samuel Carroll.

Thomas Holman.
 Gurry Ellsworth Huggins.
 Thomas Benton Perry.

Academic Department.**1. Degree of Bachelor of Arts (A. B.).**

Irwin Rautenstrauch, *cum laude*.
 Royall Hill Switzler, *cum laude*.
 (U. S. Volunteers.)

Laura Craig Blackwell.
 Gertrude Ammerman.
 Stephen Samuel Carroll.
 (U. S. Volunteers.)

John Lawrence Gerig.
 Murray Phillips, Jr.
 (U. S. Volunteers.)
 Antoine Edward Russell.
 Horace Beckley Williams.
 William Frank Wilson.

2. Degree of Bachelor of Science (B. S.).

Clarence Martin Jackson, *summa cum laude*.
 Edward Cannell, *cum laude*.

Thomas Holman.
 Thomas Benton Perry.

3. Degree of Bachelor of Letters (B. L.).

Jesse Alice Blair, *cum laude*.
 Gurry Ellsworth Huggins, *cum laude*.
 Myrtle Knepper, *cum laude*.
 George Paul Adams.
 Charles Merline Barnes.
 (U. S. Volunteers.)
 Lena Chattan Botts.

Aubrey Charles Bush.
 James W. Cosgrove.
 Harvey Valter Geiger.
 Cicero Adolphus Henderson.
 William Taton McMahan.
 Madison Love Perkins.
 Lottie Marie Riley.

4. Degree of Master of Arts (A. M.).

Payle Augustine Boulton (A. B., Univ. of Mo.).
 Thomas Elmer McGaugh (B. L., Univ. of Mo.).
 Mary Pauline Scott (A. B., Univ. of Mo.).
 Hugh Allison Smith (A. B., Univ. of Mo.).

5. Degree of Master of Science (M. S.).

Bert Munday (B. S., Univ. of Mo.).

III. PRIZES, MEDALS, SCHOLARSHIPS, AND HONORS.

- The Dachscl Prize in the Department of Engineering.....(Not awarded)
- The Prize Essays in the Department of Law—*The Right of Privacy*:
 FirstGuy Atwood Thompson
 SecondJames Samuel Montgomery Houston
- The Laws Astronomical Medal.....(Not Awarded)
- The Prize Essay, Normal Department—*Educational Ideals Since the Renaissance*.....Don Carlos Guffey
- The William J. Bryan Medal.....Goodwin Creason
- The McAnally Medal (English)—*Eugene Field*.....Myrtle Knepper
- The Stephens Medal (Oratory)—*The Hero of Compromise*.....
Guy Atwood Thompson
- The James S. Rollins Scholarship, Department of Medicine..Bert Munday
- The James S. Rollins Scholarship, Department of Law.....
Joseph Shelby McIntyre
- The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Agriculture).....Guy Alexander Roberts
- The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Engineering).....Charles Whitesides Keith
- The James S. Rollins Scholarship, Academic Department, A. B.....
Bertha Alice Greer
- The James S. Rollins Scholarship, Academic Department, B. S.....
Don Carlos Guffey
- Valedictorian in the Medical Department.....Frank Henderson Norwood
- Valedictorian in the Law Department..James Samuel Montgomery Houston
- Valedictorian in the College of Agriculture and Mechanic Arts (School of Engineering).....Thomas Benton Marbut
- Valedictorian in the College of Agriculture and Mechanic Arts (School of Agriculture).....Joseph Lewis McDermott
- Valedictorian in the Normal Department.....Gurry Ellsworth Huggins
- Valedictorian in the Academic Department.....Clarence Martin Jackson
- The Honorary Degree of Doctor of Divinity (D. D.) was conferred by the University upon.....The Reverend Frank G. Tyrell, of St. Louis
- The Honorary Degree of Doctor of Laws (LL. D.) was conferred by the University upon The Honorable Elmer Bragg Adams (United States District Judge), of St. Louis; Hon. Dewitt C. Allen, of Liberty; Dr. E. B. Craighead (President of Central College), Fayette; The Honorable James Britton Gantt (Chief Justice of Missouri), Jefferson City; J. M. Greenwood, of Kansas City.

*(b) ROLLA, MISSOURI.***CERTIFICATES OF PROFICIENCY.*****Mathematics.*****Francis Joseph Tayman.*****Surveying.*****Herbert Fordyce Rogers.****Francis Joseph Tayman.*****Assaying and Technical Analysis.*****Louis John Chamberlain.****DIPLOMAS OF GRADUATION.*****Mathematics.*****Miss Sarah Beall.****Frederick Ragland Cowles.*****Academic Department.*****Rulof Theodore Rolufs.****DEGREES.*****Civil Engineer.*****Herman Cyril Cowen.*****Bachelor of Science (Civil Engineering).*****Arthur Davis Terrell.****Euart Carl Torrence.*****Bachelor of Science (Mine Engineering).*****Ralph Barker.*****Bachelor of Science (Chemistry and Metallurgy).*****Victor Hugo Gottschalk.**

APPENDIX.

Summer Session of the University.

JUNE 5 TO AUGUST 26, 1899.

The first term of the summer session will begin Monday, June 5, and close Saturday, July 15. During this term courses in Biology, Chemistry, English, Greek, History, and Latin will be given. During the second term—July 17 to August 26—the courses in Agriculture and Horticulture, French, German, Mathematics, Physics, and Shopwork and Drawing will be given.

No student will be allowed to take more than two courses during any one term.

A. Courses Offered in the First Term.

(June 5 to July 15.)

1. Biology.

Professor AYERS.

- (a) General Biology.
- (b) Advanced Course.

2. Chemistry.

Assistant Professor CALVERT.

- (a) General Inorganic Chemistry.
- (b) Qualitative Chemical Analysis.

3. English.

Professor ALLEN.

- (a) English Language.
- (b) English Literature.

4. Greek.

Professor MANLY.

- (a) Elementary Greek.
- (b) Xenophon's Anabasis.

5. History.

Professor HICKS.

- (a) General¹ History.
- (b) Economic History of the United States.

6. Latin.**Professor JONES.**

- (a) Course for Teachers.
- (b) Course in Elementary Latin.
- (c) Course for Freshmen and Sophomores.

B. Courses Offered in the Second Term.**(July 17 to August 26.)****1. French.****Professor WEEKS.**

- (a) Elementary Course.
- (b) Advanced Course.

2. German.**Professor HOFFMAN.**

- (a) Course for Beginners.
- (b) Advanced Course.
- (c) Teachers' Course.

3. Horticulture and Agriculture.**Professors WHITTEN and MUMFORD.**

- (a) Plant Studies.
- (b) Soil Studies.

4. Mathematics.**Professor FELLOWS.**

- (a) Advanced Algebra.
- (b) Trigonometry.
- (c) Analytic Geometry and Differential Calculus.

5. Physics.**Professor LIPSCOMB.**

- (a) Laboratory Course in General Physics.
- (b) Course in Mechanics and Sound.

6. Shopwork and Drawing.**Professor MARX.**

- (a) Course for Teachers.

CREDIT FOR WORK.

All students who do work of University grade in the summer session, or work required in any professional course and pass an examination thereon, will receive credit therefor upon the books of the University at the rate of one hour's credit for each three hours of class-room work extending through one term of six weeks. A student may receive a maximum credit of six (6) hours for one term's work, or twelve (12) hours for two terms' work during the summer session.

A certificate will be given to those who devote the whole term of six weeks to the subjects selected and pass a satisfactory examination on the subject-matter as well as on the method.

The grades made by an experienced teacher will be accepted by the State Superintendent of Public Schools in lieu of an examination on such subject for State certificates.

CHARACTER OF THE COURSES.

The courses are of two kinds: (1) Those planned to meet the wants of teachers in High Schools and Academies. (2) Those planned for teachers and other persons who desire to spend a portion of the vacation period in systematic work.

Teachers in the secondary schools will find here an excellent opportunity of reviewing subjects that they teach and of gaining suggestions of new methods, or an opportunity of obtaining University instruction, with credit therefor upon the books of the University.

Statistics show that boards of education are demanding of teachers, year by year, greater efficiency and better scholarship. The summer session of the University presents to the teachers of Missouri an opportunity to meet this demand, and at very small cost.

For circular containing full information, address

M. L. LIPSCOMB, Secretary,
Columbia, Mo.

INDEX.

	Page		Page
Academic Department.....	72- 98	Approval of Schools.....	33- 37
Admission	21- 26	Approved Schools.....	27- 32
Approval of Schools.....	33- 37	Art (History of).....	82
Approved Schools.....	27- 32	Astronomy	89
Courses	73- 77	Athletics	54, 64, 74
Degrees	48, 66, 73	Athletic Association.....	56
Faculty	72- 73	Bacteriology	122
Fees	44	Biology	95
Studies	78- 98	Board of Visitors.....	13
Animal Physiology.....	96	Board	46, 64
Archæology, Classical....	82	Botany	96, 135
Astronomy	89	Buildings and Equipment.....	38-41, 63
Biology:		Cadetships	45, 52, 125
Botany	96	Calendar	111
Zoology	95	Certificates	48
Chemistry	92	Chapel Services	19, 41
Elocution	98	Chemistry	92, 135, 150
English	78	Christian Associations:	
Geology and Mineralogy..	94	Young Men's.....	55
Germanic Languages.....	85	Young Women's	56
Greek	81	Classical Archæology.....	82
History	86	Class Honors.....	44
Latin	80	Climatology	156
Mathematics	88	Clinics	123
Philosophy	88	Club-houses	46, 63
Physics	91	College Agr. & Mech. Arts.....	130- 173
Political Economy	87	Departments	134
Romance Languages.....	83	Faculty	130- 132
Admission to the University.....	21- 37	Historical Statement.....	132
Academic Department.....	21- 24	Commercial Studies.....	152
Agriculture, School of....	136	Counties Represented.....	206
Engineering, School of....	164	Curators	13
Graduate Department.....	21, 65	Date of Meeting	111
Law	105- 108	Officers	13
Medical	117- 118	Report to Governor.....	1- 12
Military Science & Tactics..	125	Curators' Scholarships.....	49
Normal Department.....	24	Degrees	48, 207, 208- 212
From Approved Schools....	26- 37	Departments of the University	
Advanced Standing	25	.....	20, 65
Agricultural Chemistry.....	150	Academic	72- 98
Agriculture, School of....	134- 156	Agr. & Mech. Arts, College of	
Admission	136	.....	130- 173
Courses	137- 140	Agriculture	134- 156
Faculty	134- 136	Engineering	163- 173
Studies	141- 156	Mechanic Arts.....	160- 163
Agriculture	141	Law	105- 115
Agricultural Chemistry..	150	Medical	116- 124
Bacteriology	151	Mil. Science & Tactics.....	125- 129
Botany	155	Mines and Metallurgy.....	174- 184
Chemistry	155	Normal	100- 104
Climatology	156	Directions for New Students...	42
Commercial Studies.....	152	Discipline	41
Drawing	152	Doctor of Philosophy.....	66
English	154	Drawing	152
Entomology	148	Elocution	98
Geology	156	English	78, 154
Horticulture	145	Engineering, School of....	163- 173
Mathematics	154	Admission	164
Military Science.....	153	Architecture	172
Physics	155	Civil Engineering.....	166
Political Economy.....	154	Courses	166- 173
Veterinary Science.....	150	Degrees	165
Alumni	57	Electrical Engineering.....	168- 169
Anatomy	123	Hydraulic Engineering.....	173

	Page		Page
Faculty	183	Uniforms	126
Mechanical Engineering....	189	Mines and Metallurgy, School	
Sanitary Engineering.....	171	of	62-64, 174-184
Surveying	187	Buildings and Equipment..	62
Enrollment in all dept's....	185-207	Courses	176-184
Entomology	148	Chemistry and Metallurgy.	173
Examinations	44, 64	Civil Engineering	178
Entrance	21-25	Mining Engineering.....	176
Expenses	44-48, 63	Degrees	176
Experiment Station.....	156-159	Expenses	63
Faculty, General.....	14-17	Faculty and officers.....	174
Farm, Agricultural College....	144	Museums:	
Farmers' Winter Courses.....	137	Agriculture	144
Fellowships	52, 65	Classical Archaeology	83
Fees and deposits.....	44	Geology	49
Free tuition. See Curators'		Zoology	49
Scholarships, and Department		Musical Clubs	36
of Military Science and Tac-		Normal Department	100-101
tics.		Admission	24
Geology and Mineralogy.....	94	Certificates	102
Germanic Languages.....	85	Courses	102-104
Gifts to the University....	58-62	Degree	104
Graduate Department.....	65-71	Faculty	100-101
Academic	65-70	Summer courses	104
College of Agr. & Mech. Arts		Normal Schools	32
.....	70-71	Observatory	90
Law	71	Officers	17
Graduate students.....	21, 65-66	Pathology	122
Graduates of Appr. Schools....	26-37	Philosophy	88
Graduates of 1898.....	208-212	Physical Culture	54
Greek	81	Physics	91, 155
Gymnasium	54	Physiology	96
History	86	Political Economy	87, 154
Honorary Degrees	48	Preachers and Lecturers....	19
Honors	44	Prizes	49-50
Horticulture	145-148	Publications, students'	54
Hospital	39	Religious exercises	41
Hygiene	123	Rollins Aid Fund	50
Journalism, School of.....	99	Rollins Scholarships	51
Laboratories	38-40	Romance Languages	83
Latin	80	Schemes of Studies	
Law Department:		75-77, 109, 119, 127, 137-140, 160,	
Admission	105-108	166-173, 176-184	
Advantages	113	Scholarships, free	50-52
Courses	109-111	Scholarships, Rollins prize....	51
Degrees and Honors.....	113	Shops	161-162
Faculty	05	Societies	55-58, 64
Fees	44	Special Students	26
Methods of Instruction....	111	Stenography	153
Lectures	19	Steward	47
Libraries	40, 63	Students, List of	185-207
Literary societies.....	55, 64	Academic	185
Location	20	Agriculture	195
Mathematics	88, 156	Engineering	197
Matron	41, 18	Graduate	185
Master of Arts	66	Law	192
Mechanic Arts, School of..	160-163	Medical	194
Course	160	Mines and Metallurgy.....	199
Facilities	161	Normal	191
Medical Department.....	116-124	Summer School	201
Admission	117	Studies, Regulations in regard	
Course	119	to	42
Degrees	123	Stephens Medal	49
Faculty	116	Summaries	203-207
Studies	120-123	Summer Session	213
Military Science & Tactics..	125-129	Tuition	44-46, 63
Admission	125	Valedictorian	44
Course	127	Veterinary Science	150
Regulations	129	Women, special provision for.	41
Cadet officers	125	Y. M. C. A.....	55
State cadets, appointment of.	128	Y. W. C. A.....	56
Supplies, general.....	126	Zoology	95

377.73

1868 H.

UNIV. OF MISSOURI

APR 23 1908

BULLETIN
OF THE
UNIVERSITY OF THE STATE
OF MISSOURI.

VOL. I.

MAY, 1900.

No. 2.

CATALOGUE

FIFTY-EIGHTH REPORT OF THE CURATORS TO THE
GOVERNOR OF THE STATE

1899-1900

COLUMBIA, MISSOURI

Published by the University of the State of Missouri. Issued February, May, June, July, August, September, October and November.

Entered at the Post Office at Columbia, Missouri, as second-class matter.

BULLETIN
OF THE
UNIVERSITY OF THE STATE
OF MISSOURI.

VOL. I.

MAY, 1900.

No. 3.

CATALOGUE

FIFTY-EIGHTH REPORT

OF THE

CURATORS

TO THE GOVERNOR OF THE STATE

1899-1900

COLUMBIA, MISSOURI

CALENDAR FOR 1900 AND 1901.

[illegible]

UNIVERSITY CALENDAR.

AT COLUMBIA.

1900—September 6, 7, 8, 10.....Entrance Examinations
 September 11, TuesdayAll Departments Open
 November 28, Wednesday, 4 p. m., to December
 3, Monday, 8:30 a. m.Thanksgiving Holidays
 December 18, TuesdaySemi-annual Meeting of the Curators
 December 21, Friday at 4 p. m., to.....} Christmas Holidays
 1901—January 3, Thursday, at 8:30 a. m.....}
 January 9, Wednesday..... ..Memorial Day
 January 18-26Mid-Year Examinations
 January 29, TuesdaySecond Semester Begins
 February 22, FridayHoliday
 May 24 to June 1.....Final Examinations
 June 1, SaturdayStephens Medal Contest
 June 2, SundayBaccalaureate Sermon
 June 3, MondayClass Day
 June 4, TuesdayAlumni Day
 June 4, TuesdayAnnual Meeting of the Curators
 June 5, WednesdayCommencement Day

AT ROLLA.

1900—September 15 and 17, Saturday and Monday,
 10 a. m.Entrance Examinations
 September 18, Tuesday.....First Term Begins
 November 29, ThursdayThanksgiving Holiday
 December 21, Friday. at 12 m., to} Christmas Holidays
 1901—January 1, Tuesday.....}
 January 1, TuesdaySecond Term Begins
 February 22, FridayHoliday
 March 18, MondayThird Term Begins
 June 11, TuesdayAnnual Meeting of Executive Committee
 June 12, WednesdayCommencement

CONTENTS.

GENERAL STATEMENT—Calendar	11- 111
Report of the Board of Curators.....	1- 11
Corporation	12
General Faculty	13- 16
Fellows and Officers	17- 18
Preachers and Lecturers	18
GENERAL INFORMATION	19- 62
Historical Statement	19
A. <i>At Columbia</i>	20- 60
Requirements for Admission by Examination	20- 24
Admission from Approved Schools.....	25- 35
Buildings and Equipment	35- 39
Organization and Government	39
Lectures, Recitations and Religious Exercises.....	39
Provisions for Young Women	40
Discipline	40
Directions for New Students	40
Regulations regarding Studies.....	40- 43
Expenses	43- 46
Degrees and Certificates	46- 47
Prizes	47- 49
Sources of Aid	49- 52
Making One's Way at the University	52
Cost of Attending the University	52- 54
Physical Culture	54
Societies	55- 58
Gifts to the University	58- 60
B. <i>At Rolla</i>	61- 62
Buildings and Equipment	61
Expenses, etc.	62

Contents.

DEPARTMENT STATEMENTS—

I. <i>Graduate</i>	63- 70
Admission (Academic Graduate Courses)	63
Degrees (Academic)	64
Courses	65- 68
College of Agriculture	68- 69
Engineering	69
Law	69- 70
II. <i>Academic—Faculty</i>	71- 72
Scheme of Study	72- 74
Courses Open to Freshmen.. ..	75
Hours of the Various Courses	76- 77
Courses of Study in detail.....	78- 97
English, 78; Latin, 80; Greek, 81; Classical Archaeology, 81; Romance Languages, 83; Germanic Languages, 84; History, 86; Economics, 86; Philosophy, 87; Mathematics, 88; Astronomy, 89; Physics, 90; Chemistry, 91; Geology and Mineralogy, 92; Zoology, 92; Botany, 94; Physiology, 95; Elocution, 96; Sociology, 97.	
<i>School of Journalism</i>	97
III. <i>Education—Faculty</i>	98
Elementary course	98
Advanced course	99
Industrial courses	100
Teachers' courses in Summer Session.....	100
IV. <i>Law—Faculty</i>	101
Admission	101- 103
Courses	105- 107
Texts	108
Graduate course	106
Special course	107
Methods of instruction	108- 108
Degrees and Honors	108- 109
Announcements	109- 111
V. <i>Medicine—Faculty</i>	112- 113
Admission	113- 115
Course.....	118
Course in detail	119- 124
Degrees, etc.....	124- 125
VI. <i>Military—Announcement</i>	128- 130

Contents.

VII. College of Agriculture and Mechanic Arts.....	131- 172
Faculty	131- 133
Historical Statement	133
A. School of Agriculture.....	135- 136
Admission	135- 136
Schemes of courses	136- 140
Courses in detail	140- 153
Agriculture, 140; Horticulture, 143; Entomology, 146; Agricultural Chemistry, 148; Veterinary Science, 149; Bacteriology, 149; Shop-work, 149; Drawing, 150; Commercial Studies, 150; Military Science, 150; English, 151; Economics, 151; Mathematics, 151; Physics, 152; Chemistry, 152; Botany, 152; Geology, 152; Climatology, 153.	
B. Experiment Station....	152- 156
C. School of Mechanic Arts.....	156- 160
Scheme of studies	157
D. School of Engineering.....	160- 169
Admission	160- 161
Courses and Degrees	161
Courses in detail	162- 168
(a) Civil Engineering	162- 164
(b) Surveying	163
(c) Electrical Engineering	164- 165
(d) Mechanical Engineering	165- 167
(e) Sanitary Engineering	167- 168
(f) Hydraulic Engineering.....	168
School of Architecture	169- 172
Admission	169
Course	170- 172
School of Mines (at Rolla).....	173- 185
Faculty	175
Statement	174
Admission	174
Courses and Degrees	174
Courses in detail	175- 185
(a) Mining Engineering	175- 177
(b) Civil Engineering	177- 178
(c) Chemistry and Metallurgy	178- 180
(d) General Science	180- 182
(e) Special Courses	182- 185

Contents.

LIST OF STUDENTS AND GRADUATES	186- 219
I. List of Students	186- 210
Graduate Department	186
Academic Department	186- 193
Department of Education	193- 194
Law Department	194- 196
Medical Department	196- 197
College of Agriculture and Mechanic Arts	197- 203
School of Mines and Metallurgy	203- 206
Summer School	206- 210
Summaries	211- 214
Degrees Conferred	214
II. List of Graduates for 1898-1899	215- 219
At Columbia	215
At Rolla	219
APPENDIX—	
Summer Session	220
INDEX	223

Correction.

After that part of the Catalogue in which the courses in Greek are given (page 81) was printed, Professor Pickard was relieved of all work in Greek. During the session of 1900-1901, this work will be in charge of Acting Professor Kyle.

Report of the Board of Curators.

COLUMBIA, Mo., 1 May, 1900.

To His Excellency, LON V. STEPHENS, *Governor of Missouri*:

DEAR SIR: I herewith furnish the Annual Catalogue of the University of Missouri, presenting a review of the work done for 1899-1900 and outlining the programme for the scholastic year of 1900-1901.

At Columbia: In the summer of 1899 Dr. Howard Ayers resigned the chair of Biology to accept the presidency of the University of Cincinnati. In his stead we have elected Dr. George Lefevre.

In the fall of 1899 Dr. John M. Burnam resigned his position as Assistant Professor of Latin. In his stead the Board has elected Miss Eva Johnston, of Columbia, granting her, without salary, a furlough of two years in which to prosecute her studies in Europe. Dr. Charles B. Newcomer has been chosen as her substitute.

Captain A. P. Buffington, commandant of cadets, detailed by the War Department, has not been able to report for duty during the present session. He has been detained elsewhere in government service. As his substitute the Board has elected Major W. H. Turner, who has given excellent service.

In the fall of 1899, Mr. E. J. Mason resigned his position as instructor in Mechanic Arts. In his place the Board has elected Mr. G. A. Irvine.

In the summer of 1899 Professor Milton Updegraff was elected Astronomer at the Naval Observatory at Washington at a salary much in excess of that which he received here. The chair has not yet been filled for lack of means.

In the summer of 1900 Hon. John R. Kirk resigned his position as Examiner of Schools to the University to take the presidency of the Kirksville Normal. In his place the Board has appointed Mr. W. M. Hoge.

The Fortieth General Assembly ordered the University to fill the chairs of Architecture, Anatomy, and Domestic Economy. Mr. Thomas Nolan has been elected Professor of Architecture. Mr. C. M. Jackson has been made Assistant Professor in charge of Anatomy. It has proved difficult to fill the chair of Domestic Economy. This will be done during the summer of 1900, if an unquestionably fine woman can be found.

At the unanimous request of the Medical department, and also of the faculty of Agriculture, the Board has decided to relieve Dr. Connaway of

the work in Physiology, leaving him free to give his entire time to Veterinary Surgery. The admirable results that he has achieved in this direction abundantly warrant the change. Accordingly the chair of Physiology in the Medical Department will be filled in time for the opening of the University in the fall of 1900.

The importance of Experimental Psychology and Child Study to those training themselves to be teachers in the State, and the importance of Sociology to the general public, have caused the Board to establish these chairs. It is probable that they will be filled in time for the opening of the University in the fall of 1900.

Since 1 February, 1898, it has been deemed advisable to keep the Law Library, and the General Library of the University open to students at night. It is believed that this is some offset to the temptations to which students are everywhere exposed at night. It is necessary to employ some of the students for this service. The compensation offered them is small and the service is satisfactory.

No mention is made by name of the teaching fellows, of whom a number are employed every year. They are not members of the Faculty but are advanced students who find the small compensation (\$200 a year) which the University gives them an aid in prosecuting their studies. Each of them teaches six hours a week, the remainder of time being spent in advanced study. It takes four teaching fellows to do the work of one instructor and they receive each about one fourth of the compensation given to an instructor. This service is satisfactory in maintaining advanced work in the University and costs the State nothing beyond what it would have to pay instructors.

At Rolla: Professor A. H. Timmerman has resigned the chair of Physics. In his place we have appointed Dr. A. L. McRae.

Professor F. W. Draper has resigned the chair of Metallurgy. In his place has been appointed Herman O. Schulze, instructor in Metallurgy and Ore-dressing.

Mr. Roger H. Hatchett resigned as instructor in Shopwork and Drawing, and Mr. Josua H. Taylor has been appointed to fill the vacancy.

Mr. Arthur D. Terrel resigned as assistant in Physics, and Mr. Francis J. Tayman has been appointed to fill the vacancy.

Mr. George C. Clark resigned as assistant in Chemistry and Mr. Victor H. Gottschalk has been appointed to fill the vacancy.

THE FACULTY.

The University is in charge of able men. They are thoroughly committed to the work in hand, and display enthusiasm.

In administering the affairs of the University one aspect challenges the most serious consideration. Changes in the Faculty are to be avoided, and should never take place unless for reasons the most cogent in their character. Changes are often inevitable because of our inability to retain in the service of the University the best qualified workers of the times. Other and more favored institutions, with ample resources at command, take from us our thoroughly trained men. The loss thus sustained is incalculable. The retention of valuable men is all-important. Unless ample provision is made to do this we shall suffer additional losses. Enlarged resources should be placed at the command of the Board, enabling us to compete with any institution in the country in securing and retaining the best talent for University work. This view has special reference to the salaries of Head Professors. A great State like Missouri can not afford to cripple the work of its University or minify the opportunity of the youth of the commonwealth. In meeting the wants here indicated, and supplying in the Faculty representative ability of the age, we can attract the young men of Missouri to the University and prevent them from leaving home in search of higher advantages elsewhere. The above views are commended to and urged upon the attention of the people of Missouri.

The Faculties at Columbia (the same is also true at Rolla) are more harmonious than they have ever been in the history of the University. Teachers and officers are working in sympathy for the advancement of the institution. This is no small thing.

THE STUDENTS.

Free Tuition. Except in the Junior and Senior years of Law the Board of Curators has ordered that tuition shall be free in all departments of the University from 1 September, 1900. This is a thing which the Curators have under the law the power to do without reference to anybody else.

Increased Enrollment. The enrollment in the departments at Columbia (and also at Rolla) is very much larger in the session of 1899-1900 than it has ever been (at either place) in the history of the University. The enrollment at Columbia has exceeded in this session 1,050 students, while that at Rolla has reached 175, making a total in the whole University of more than 1,200. In the session of 1899-1900 the students at Columbia and Rolla came from forty-two (42) States, Territories and foreign countries.

Discipline. The discipline in the session of 1899-1900 has been remarkably good.

Paying Their Own Way. A number of students manage to pay their

own way at the State University by their own exertions. Some of the most distinguished men in Missouri and other States have done this in former years. The number of such students in the present session (1899-1900) is larger than ever before in the history of the University. The Y. M. C. A., a student organization, to its credit be it said, has appointed a committee to canvass the town for work and distribute it among students needing it. Too much praise can not be given for the encouragement which this body of Christian students and the teachers and officers of the University have given to poor young men in supporting themselves by their own labors.

PARKER MEMORIAL HOSPITAL.

Mr. William L. Parker gave \$15,000 for the erection of a Hospital, upon condition that the University raise \$10,000 from some other source. The Fortieth General Assembly supplied the \$10,000. The Hospital is now building, in a good location, on the campus of the University. It will be completed in the early summer. It will be a blessing to such students as may be seized with illness at the University. It will be of great service to the Medical Department and also to the sick of the State. It is the only Hospital owned and managed by the State of Missouri.

THE UNIVERSITY AND THE PUBLIC SCHOOLS.

Spring Courses for Teachers. The University is doing everything in its power to aid the district schools and the high schools in their efforts to do better work. The Spring Courses for Teachers which are given from April 1 to June 1 are intended especially for the teachers in the district schools, and embrace those subjects which are of chief interest to them. These courses are wholly free and no examination is required for admission.

The Summer School. The Summer School opens early in June and continues for twelve weeks. It is intended primarily for the high school teachers. During the past summer, courses in English, Latin, French, German, Greek, Biology, Physics, Chemistry, Shopwork and Drawing, Horticulture, and Mathematics were given. It is gratifying to know that this school is growing in favor year by year, and that many of the leading teachers of the State have been among its students. During the last session the enrollment was 268.

Approved High Schools. In 1891, there were twenty-three (23) schools on the list of "Approved Schools." There are now over one hundred and three (103) and the list is growing all the time. There are nearly one hundred schools applying for admission to this list.

The University has done much to foster the marvelous growth which

has taken place in secondary education in the State in the last three years. In June, 1895, there were nine thousand five hundred (9,500) pupils enrolled in the high schools of Missouri. In June, 1898, according to the Superintendent of Public Instruction, the number had reached to nearly twenty thousand (20,000), while his estimate for the year ending June, 1899, is twenty-five thousand (25,000).

We have already begun to reap the benefits of this growth in the secondary schools. The Freshman class entering in September, 1899, was the largest and the best in the history of the University, for most of the students came from Approved Schools.

State Aid to High Schools. It would be a Godsend to education in Missouri if in some way the State could give *stimulative* aid to high schools in counties that really need aid. If it be allowed us to make some suggestions, we would respectfully offer the following. It is a matter that deeply concerns the University:

(1) State aid should not be extended to a high school situated in a school district that is able to support a high school of its own—say in a district in which the assessed valuation of property is a million dollars or more.

(2) State aid should not be offered to a high school in a district in which the people are taxing themselves for school purposes less than seventy-five cents on the hundred dollars. To those who tax themselves in this sum the State might well offer \$300 or \$400, this minimum amount being increased where the rate of taxation is eighty cents on the hundred dollars, and again increased where it is eighty-five cents, and so on up to a dollar.

(3) To encourage three or more school districts to unite for the support of a common high school, as provided for in an existing statute, a fixed amount of State aid might be offered without reference to the assessed valuation of property. There would be no danger that rich districts might unite with poor districts, and thus profit by State aid; for the loss to a rich district by uniting with two or three poor ones would be greater than the aid received. The State could well afford to put a premium upon such a union of rural districts for the maintenance of a common high school.

(4) It might well be specified that where State aid is extended to any high school the teaching shall gradually become industrial as well as literary and scientific. Any high school profiting by State aid might well be required to give in time instruction in Mechanic Arts, Horticulture, Entomology, and Domestic Science, as well as in the subjects usually taught in first class high schools. The richer portions of Missouri can well afford in their own interest to lift up education in the poorer sections.

STATE BUREAUS, BOARDS, AND COMMISSIONS AT COLUMBIA.

Every department of the State Government which has for its object scientific, philanthropic, or statistical work should be located at the University at Columbia. Free quarters should be given to such Bureaus, Boards, and Commissions in the buildings of the University. They should have free access to its libraries and laboratories. They might occasionally lecture before our students. They should cooperate with the allied departments of the University and receive help from them. Chief among these the Geological Survey, which is now crowding the Armory at Jefferson City, might well be removed to Columbia, where we have a fire proof museum built especially for geological specimens and ready for occupation. This museum is fifty by one hundred feet. We stand prepared to furnish the Survey with sufficient office rooms also. We suggest Columbia partly because it will henceforth be easy of access from Jefferson City over the new railroad. It is possible to go from Jefferson City to Columbia in an hour and a half. The distance along the new railroad and the M., K. & T. with which it connects is about thirty-five miles.

The State Board of Health should receive free quarters in our Medical Department, and have access to our libraries and laboratories. It would be an aid to us in our medical work and we could help the Board greatly.

In our Engineering building should be located any Bureau or Commission that may be established for good roads.

The State Board of Charities and Correction might well be quartered in our Academic Hall close to our Department of Political Economy, which would receive aid from it and get aid in return.

The State Fish Commission should have at least a Station at Columbia in connection with our Department of Biology and our Experiment Station. We could render it valuable aid and receive some aid in return.

Let us close by saying that every Department, or Board, or Bureau, or Commission of the State that has for its object scientific, statistical, or charitable work, should be located at Columbia, in the buildings of the University, should have rooms rent free, should have access to the libraries and laboratories, should receive aid from its scientific and statistical departments, and should render them some service in return.

PERMANENT PROVISION FOR THE UNIVERSITY.

The following recommendations, respecting the State University, of Gov. Stone in his last message and of Gov. Stephens in his first message to the Legislature of Missouri, are in perfect accord. They should make

an epoch in the history of higher education in our State, and should call forth hearty praise from every advocate of enlightened progress.

Hon. Wm. J. Stone, Governor of Missouri, in his message to the Thirty-ninth General Assembly at Jefferson City, on Friday, January 8, 1897, says:

"We now have laid the foundation of a great University—but we have little more than that. If the institution is liberally supported by the people and wisely managed by those in charge of it, we can soon build up here in our Imperial State the greatest University in the southwestern section of the Union. I should regard that consummation as one of the proudest achievements within our reach—one that would reflect the highest honor and redound in the greatest benefits to the people. Aside from the natural and patriotic desire all of us should feel to supply our sons and daughters with the best possible educational facilities, the presence of a superb and famous University in the State would do more, perhaps, than any other one thing to lift the State into universal esteem and attract to it the favorable notice of mankind. It will not do to say that the University is not the school of the poor boy, or that it is not now what it ought to be. As a matter of fact, a majority of the University students are the sons and daughters of those denominated as the common people. But if it were true that the children of the poor do not for any reason enjoy to any large extent the advantages of the institution, then their opportunities for enjoying them should be made easier. It more often happens than otherwise that those who rise to great and deserved prominence in the State or nation, and who add the greatest lustre to their country's history, have come from what are regarded as the humbler walks of life. There are hundreds of boys and girls whose possibilities of usefulness and greatness can not be estimated, if they were only given opportunities for full development. Our common and intermediate schools are indispensable. They perform a noble work and should be supported with unstinted generosity. But those schools can not take the place of the University. The University is the final training school where those prepared for admission to it are rounded out and specially equipped for successful labor in the fields of their choice. It should be supported in a broad and catholic spirit, provided with every needed facility, and administered along such practical lines as will strengthen and build it up, so that none desiring its advantages will be denied them. If it is not now such a school as it ought to be, we should, on that account, strive all the more to make it what we would have it. Somewhere in the Southwest and in the near future, a splendid University will rise—one that will shine resplendent above all rivals. Illinois, Iowa, Kansas, Nebraska and Texas are all fighting for this distinction. When success is once achieved it will be hard to wrest the laurel from the victor. Unquestioned su-

premacy once obtained is apt to be permanent. Missouri holds the key to the situation, and, if we but utilize our advantage, we can win the prize. If we are to succeed, the people must take hold of the University with a firm but affectionate hand and lift it right up beyond the reach of danger, and send it forward with that confident strength that overwhelms opposition and makes victory sure.

"The University can not be properly, even decently, supported out of the present revenues and in accordance with the present methods of making appropriations without detriment to other important interests. The truth is, this institution ought to be taken out of the general squabble for appropriations which occurs at every regular session of the General Assembly, and be provided with a permanent and sufficient income of its own. The sum which can now be set apart out of the general revenue for the University is grossly and shamefully inadequate to answer its just demands. It ought to be sustained from a permanent fund. It should not only be spared the humiliation of becoming a biennial mendicant, but it should be placed in a position of absolute independence. Many of the States now levy a special tax or set apart by law a certain per cent of their aggregate revenues to their Universities, varying in amount from one-fifth to one-twelfth of one mill per annum on every dollar of assessment or collections. This is done in Ohio, Indiana, Illinois, Wisconsin, Minnesota, Michigan, Kansas, Nebraska, California, and perhaps other States. In Missouri the University gets what it can out of what some have not inaptly designated as the general scramble. Why should not our University be treated with as much consideration as are those of other States? Not long since the Hon. J. R. Kirk, Superintendent of Public Instruction, recommended that the General Assembly should set apart for the benefit of the University an equivalent of one-sixth of a mill per annum upon every dollar of the assessed value of the taxable property of the State; and in support of his recommendation he expressed the hope that if that policy should be adopted it would 'remove the question of properly supporting the University from the arena of public and local politics, and place it securely on the platform of those high interests whose support is secured through the action of a just and unfailing rule.' If that recommendation should be agreed to, it would result in creating an annual revenue of about \$165,900, based on present valuations. The sum realized from such a tax would, of course, increase from year to year, with the increase of valuations; but that would be as it should, for the necessities of the institution would increase with the growth of the State. In the general spirit and object of this recommendation, and in its wisdom as a policy, I most heartily concur."

Hon. Lon V. Stephens, Governor of Missouri, delivered before the

Thirty-ninth General Assembly, at Jefferson City, January 11, 1897, his Inaugural Address, in which he said :

"No interest in Missouri should be more carefully guarded or more vigorously promoted than her public school system. Her schools should all be encouraged by wise legislation and supported, as they have always been, by ample appropriations. The State University, which is the cap sheaf of our public school system, is entitled to, and will, doubtless, receive at your hands that consideration which it has always received, and which will enable it to take front rank among the institutions of America. If the necessity ever existed for a Missouri youth to leave his own State for education, it should be removed by such judicious fostering of our own institution as will not only keep our boys and girls at home, but will draw to Missouri the ambitious of other States. I have conferred with Governor Stone, and I have read that portion of his message concerning the endowment fund for the University. I approve of the suggestions he makes to you on this subject."

In a Special Message sent in February, 1897, to the Thirty-ninth General Assembly, earnestly advocating the endowment of the University, His Excellency, Governor Stephens, says :

"Under the present conditions the revenues of the University from endowments from the United States Treasury (known as the 'Morrill Fund') and from fees and rents, amounts to about \$102,000 per year. The current expenses of maintenance, including the proper and inevitable growth of libraries and laboratories, and a reasonable margin for putting up special buildings, as outlined in the biennial report just issued, exceeds this amount by at least \$100,000.....*"

"As the fifth State in the Union, Missouri can not afford to take a step backward, nor are we willing to stand still in this fight for the higher education of our children when the States adjoining us are doing so much for theirs....."

Finally, if our University is to keep pace with other State Universities, and if Missouri means to offer her children on her own soil as good education as is offered by other States, she must give her University in some form adequate, permanent endowment for maintenance and support, and must provide buildings and equipment with greater liberality than has been shown in the immediate past. Our University can not hold its own in the race for preeminence when other States are much more liberal in their appropriations.

Some six years ago a bill was introduced into the Legislature of Michigan increasing more than three times the annual tax for the maintenance

*An attentive reading of this paragraph shows that the Governor means \$100,000 a year, or \$200,000 for each biennial period.

and support of the University. Not more than three votes in House and Senate combined were cast against the measure.

About four years ago the Ohio Legislature voted by a large majority to double the annual tax for the maintenance and support of her University.

About three years ago the Legislature of California passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, which had, in addition to said tax, an interest-bearing endowment of more than four millions of dollars, and had recently received from private individuals promises of more than four millions of dollars for new buildings. Therefore, although the University had four millions of dollars in interest-bearing funds, and had received offers of four millions of dollars from private individuals for new buildings, and was receiving from the State for current expenses \$209,000 for each biennial period, the Legislature, in the midst of hard times, passed without a dissenting vote a bill to double the tax for the maintenance and support of the University, so that it should yield thenceforth for each biennial period \$400,000. The assessed valuation of property in Missouri is almost exactly what it is in California. The income of the California University is not far short of \$500,000 a year—or \$1,000,000 each biennial period.

In the winter of 1899 the Legislature of Nebraska, by a large majority, voted to double the tax for the maintenance of the State University. If Missouri taxed herself at the same rate she would give to her University more than \$1,500,000 each biennial period.

In the winter of 1899 the Legislature of Kansas gave to the University at Lawrence \$355,000 for the biennial period, and the Agricultural College receives for maintenance annually three twenty-fifths ($\frac{3}{25}$) of a mill. Kansas has given in the present biennial period for the support of instruction represented at Columbia, Missouri, \$470,000.

The University of Illinois receives from all sources nearly \$300,000 a year—nearly \$600,000 each biennial period.

Ohio gives her University annually the proceeds of a tax of one-tenth ($\frac{1}{10}$) of a mill. The income of the University from all sources is over \$275,000 a year, or \$550,000 in a biennial period.

The University of Michigan (not including the School of Mines or the Agricultural College) receives annually the proceeds of a tax of one-sixth ($\frac{1}{6}$) of a mill. Its income from all sources is more than \$425,000 a year—\$850,000 a biennial period.

The University of Wisconsin receives annually for maintenance nine-fortieths ($\frac{9}{40}$) of a mill and a large fraction of a mill more for special

purposes. Its income from all sources is more than \$325,000 a year—more than \$650,000 each biennial period.

The University of Iowa (not including the Agricultural and Mechanical College) receives for maintenance annually three twenty-fifths (3-25) of a mill, and for buildings (for five years) one-tenth (1-10) of a mill. In Missouri a similar tax would yield \$250,000 a year—or \$500,000 a biennial period.

The University of Minnesota gets annually for maintenance alone (not including buildings) three-twentieths (3-20) of a mill. The total income is about \$275,000 a year—\$550,000 biennially.

The University of Oklahoma has the proceeds of a tax of one-half (1-2) of a mill each year. In Missouri this would mean \$500,000 a year, or \$1,000,000 each biennial period.

Departing from State Universities, let me call attention to the fact that we must all compete in some measure with the University of Chicago, whose income exceeds \$600,000 a year, or \$1,200,000 each biennial period.

It is not our business in the annual catalogue to advertise the glories of other States and other Universities, but it is our duty to tell our own people plainly that if better provision is not made for their University, it will become a by-word and a reproach when compared with those of other States, and that the youth of our State must receive at home inferior educational advantages or must go over the borders of this Commonwealth to Universities that are liberally supported by other States. Kansas, Wisconsin, and Illinois are very close, and Lincoln, Nebraska, (the seat of the University), is within two hours' ride of the northwestern border of Missouri.

Very respectfully yours,

JOHN D. VINCIL,

President of the Board of Curators.

The Board of Curators and the Faculty reserve the right to modify, without further notice, any offer made in this catalogue, if circumstances should render such change necessary, and will be bound by it in any event only for the session following the date of publication.

CORPORATION.

THE BOARD OF CURATORS.

GARDINER LATHROP, Kansas City.....	}	Term expires Jan. 1, 1901
O. D. JONES, Edina.....		
M. E. BENTON, Neosho.....		
JOHN D. VINCIL, St. Louis.....	}	Term expires Jan. 1, 1903
NOAH M. GIVAN, Harrisonville.....		
CAMPBELL WELLS, Platte City.....		
WALTER WILLIAMS, Columbia.....	}	Term expires Jan. 1, 1905
D. A. McMILLAN, Mexico.....		
G. F. GMELICH, Boonville.....		

OFFICERS OF THE BOARD.

JOHN D. VINCIL	President
GARDINER LATHROP	Vice-President
J. G. BABB,	R. B. PRICE,
Secretary.	Treasurer.

THE EXECUTIVE BOARD AT COLUMBIA.

NOAH M. GIVAN	Harrisonville
CAMPBELL WELLS	Platte City
WALTER WILLIAMS	Columbia

THE EXECUTIVE COMMITTEE OF THE SCHOOL OF MINES.

JOHN D. VINCIL, Chairman	St. Louis
M. E. BENTON	Neosho
D. A. McMILLAN	Mexico
CHAS. L. WOODS,	HENRY WOOD,
Secretary.	Treasurer (office at Rolla).

THE BOARD OF VISITORS.

CHARLES E. YEATER	Sedalia
C. D. CORUM	Boonville
WALLACE ESTILL	Estill, Howard county
J. N. BALLARD	Montrose
WM. A. WIGHT	Moberly

Faculty of the University.

Names are printed in order of appointment, except that of the President.

Those marked with a [*] are names of officers or members of the Faculty of the School of Mines and Metallurgy, at Rolla, Missouri.

RICHARD HENRY JESSE, LL. D.,

President, and Professor of Ancient and Mediaeval History.

PAUL SCHWEITZER, Ph. D., LL. D.,

Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,

Professor of Surgery and Diseases of Women and Children.

WOODSON MOSS, M. D.,

Professor of the Practice of Medicine.

JOHN CARLETON JONES, A. M., Ph. D.,

Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,

Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,

Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,

Emeritus Professor of Geology and Mineralogy.

JAMES AULL YANTIS, LL. B.,

Professor of Law.

MILLARD LEWIS LIPSCOMB, A. M.,

Professor of Physics.

ALEXANDER MARTIN, A. M., LL. D.,

Professor of Law and Dean of the Law Faculty.

† WILLIAM GWATHMEY MANLY, A. M.,

Professor of Greek Language and Literature.

Professor of Astronomy.

CHRISTIAN WILLIAM MARX, B. E.,

Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

† Absent during the session of 1900-1901.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Comparative Medicine.

*ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

JOHN DAVISON LAWSON, B. C. L., LL. D.,
Professor of Law.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of Economics.

JOHN PICKARD, A. M., Ph. D.,
Professor of Classical Archaeology, Assistant Professor of Greek, Curator of the Museum of Classical Archaeology, and Dean of the Academic Department.

FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

JOHN CHARLES WHITTEN, B. S., M. S.,
Professor of Horticulture, and Horticulturist to the Experiment Station.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

HENRY JACKSON WATERS, B. A. S.,
Dean of the College of Agriculture and Mechanic Arts, and Director of the Experiment Station.

† ISIDOR LOEB, M. S., LL. B.,
Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

FREDERICK BLACKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum.

HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.

JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.

*EUGENE THOMAS ALLEN, A. B., Ph. D.,
Professor of Chemistry.

RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

† Absent during the session of 1890—1900.

JOHN RUTLEDGE SCOTT, A. M.,
Professor of Elocution.

HOWARD BURTON SHAW, B. C. E., A. M.,
Professor of Electrical Engineering.

† CURTIS FLETCHER MARBUT, B. S., A. M.,
Professor of Geology and Mineralogy, and Curator of the Geological Museum.

* GEORGE EDGAR LADD, Ph. D.,
Director of School of Mines and Metallurgy, and Professor of Geology and Mining.

* GEORGE REINOLD DEAN, C. E., B. S.,
Professor of Mathematics.

† ABRAHAM PERRY BUFFINGTON (Captain U. S. Army),
Professor of Military Science and Tactics.

YOUNGER PITTS ROTHWELL, A. M.,
Professor of Physical Culture, and Director of Gymnasiums.

JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

JOSEPH MARTIN WHITE, A. B.,
Professor of Pedagogy.

* AUSTIN LEE MCRAE, B. S., D. S.,
Professor of Physics.

THOMAS NOLAN, B. S., Ph. B., M. S.,
Professor of Architecture.

GEORGE LEFEVRE, A. B., Ph. D.,
Professor of Zoology, and Curator of Zoological Museum.

CLARENCE MARTIN JACKSON, B. S., M. S.,
Assistant Professor (in charge) of Anatomy and Histology.

EUGENE MORROW VIOLETTE, A. B., A. M.,
Acting Assistant Professor of History.

ARTHUR GRAY LEONARD, A. B., A. M., Ph. D.,
Acting Assistant Professor of Geology and Mineralogy and Acting Curator of the Geological Museum.

† EVA JOHNSTON, A. M.,
Assistant Professor of Latin.

CHARLES BERRY NEWCOMER, A. B., A. M., Ph. D.,
Acting Assistant Professor of Latin.

JAMES WILLIAM KYLE, A. M.,
Acting Professor of Greek Language and Literature.

† Absent during session of 1899-1900.

*PAUL JULIUS WILKINS, B. S.,

Instructor in Modern Languages.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

MARY ESTELLE PORTER, B. L.,

Instructor in Commercial Studies.

*ROGER HANSON HATCHETT,

Instructor in Shop-work and Drawing.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

*JOHN BENNETT SCOTT,

Instructor in English.

CHARLES THOM, A. B., A. M., Ph. D.,

Instructor (in charge) in Botany.

THOMAS JACOB RODHOUSE, B. S.,

Instructor in Drawing.

WILLIAM HENRY TURNER, B. S.,

Instructor, in Military Science and Tactics, and Acting Commandant of Cadets.

GEORGE ANDREW IRVINE, B. S. in E. E.,

Instructor in Mechanic Arts.

*ALBERT DYKE WILSON,

Assistant in Chemical Laboratory.

*VICTOR HUGO GOTTSCHALK,

Assistant in Chemical Laboratory.

*WILLIAM MELVIN WEIGEL,

Assistant in Physical Department.

† A. E. HACKETT,

Lecturer on Climatology.

SAMUEL MATHUES HILL,

Assistant in Gymnasium.

FRANCIS MARION MOTTER,

Assistant in Gymnasium.

AVA D. STEELE, A. B.,

Assistant in Gymnasium.

FELLOWS.**

In Mathematics:

ROBERT RYLAND FLEET, A. B.

ANDREW GASTON GLADNEY.

†In the service of the U. S. Weather Bureau.

**Fellows are elected for one year and are required to teach five or six hours a week.

CARL MANFORD MOORE, A. B.
MARK ALLEN SELSOR, B. S.

In Romance Languages:

RICHMOND LAUREN HAWKINS, A. B. .
THEODORE ELY HAMILTON, A. B.
EDWIN STANTON DU PONCOT, A. B.

In Germanic Languages:

CHARLES MONROE STRONG, B. L.
ALVIN HENRY IWERT, B. L.

In Biology:

MARY ISABELLE STEELE.

In Physiology:

CHARLES LEONARD PARKHURST, B. S.

In Materia Medica:

ROBERT LEE REID, M. D.

OTHER OFFICERS.

J. G. BABB, A. M., LL. B.,
Proctor, and Secretary to the Board of Curators.

R. B. PRICE,
Treasurer.

*HENRY WOOD,
Treasurer of the School of Mines.

IRVIN SWITZLER,
Registrar, and Secretary to the Council and the Various Faculties.

*CHARLES L. WOODS,
Secretary to Executive Committee, School of Mines.

WILLIAM MCGUFFEY HOGE, A. B., A. M.,
Examiner of Schools.

WALTER K. STONE, A. B.,
Librarian.

MRS. LOUISE NORWOOD FITCH,
Matron.

GEORGE W. HENDERSON,
Steward of Club Houses.

JOSEPH SHELBY MADDOX,
Assistant Librarian.

ORESTES MITCHELL,
Assistant in Law Library.

ABRAHAM LAFFERTY,
Assistant in Law Library.

JAMES EARL DUNN,
Assistant in Law Library.

WALTER CONRAD GOODSON,
Secretary of the Y. M. C. A.

*MISS MAUD B. MITCHELL,
Librarian.

For officers and staff of Experiment Station, see Index.

Lecturers Before the University.

W. H. Black, D. D., President of Missouri Valley College. Subject :
"The Ethics of Social Pathology ;" January 9, 1900.

H. D. Jenkins, D. D., Kansas City. Subject : "The College Diploma ;"
January 30, 1900.

Dr. Victor C. Vaughan, Dean of the Department of Medicine and Sur-
gery, University of Michigan. Address at the laying of the corner stone of
the Parker Memorial Hospital ; December 19, 1899.

General Information.

Departments of the University.

The University comprises the following Departments :

- I—Graduate Department.
- II—Academic Department.
- III—Department of Education.
- IV—Department of Law.
- V—Department of Medicine.
- VI—Department of Military Science and Tactics.
- VII—College of Agriculture and Mechanic Arts, embracing
 - A. *School of Agriculture.*
 - B. *Experiment Station.*
 - C. *School of Mechanic Arts.*
 - D. *School of Enginecring.*
 - E. *School of Architecture.*
- VIII—The School of Mines and Metallurgy.

[These Departments, II to VIII, are established and made co-ordinate by the statutes of Missouri.]

Historical Statement.

The Legislative Act establishing the University was passed 11 February, 1839.

The University was located at Columbia, Boone county, June 24, 1839. The cornerstone of the Main building was laid July 4, 1840, and this is generally accepted as the date of the *foundation* of the University. Courses of instruction in Academic work were begun on April 14, 1841. A Normal department was established in 1867, and was opened in September, 1868. In 1869 women were admitted first to the Normal department. In 1870 to the Academic department, and soon after to all Departments. The College of Agriculture and Mechanic Arts and the School of Mines and Metallurgy were made Departments of the University in 1870—the School of Mines and Metallurgy being located at Rolla, where it was formally opened November 23, 1871. The Law department was opened in 1872; the Medical department in 1873; and the Engineering department in 1877. The Experiment Station was established, under act of Congress, in 1888. The Missouri State Military School was created a Department of the University in 1890. In 1868 the State gave aid for the first time to the Uni-

versity—a sum of \$10,000. On January 9, 1892, the Main building of the University at Columbia was destroyed by fire. In the following March the Legislature gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000, and by \$25,000 additional for a new building at Rolla. The 39th General Assembly appropriated \$33,000 to build an additional club house at Columbia, and the 40th erected a Hospital.

For a fuller statement about the College of Agriculture and Mechanic Arts, see announcement of this College.

A. THE DEPARTMENTS AT COLUMBIA.

REQUIREMENTS FOR ADMISSION BY EXAMINATION.

The following are the requirements for admission by examination to the various Departments:

To the Graduate Department:

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for. See announcement of this Department.

To the Academic Department:

There are three groups of requirements for admission to the Academic department. The candidate for admission must meet the requirements of one of these groups. Group I includes Greek; Group II substitutes History and Science for Greek; and Group III has History, Science and Modern Languages in place of Latin and Greek.

Only students who have met the requirements of Group I or of Group II can become candidates for the degree of A. B.; and only those who have met the requirements of Group III can become candidates for the degree of B. S.

The groups are as follows:

GROUP I (A. B.).

1. **LATIN.** Five books of Caesar's Gallic War, four orations of Cicero, and Allen's Prose Composition. For two books of the Gallic War, eight books of Eutropius, or an equivalent of the *Viri Romae*, may be substituted. Mastery of the essentials of etymology and syntax is expected.

2. **GREEK.** Three books of Xenophon's *Anabasis*, Harper and Castle's Greek Prose Composition, Goodwin's Greek Grammar.

The work may be accomplished in two years. A student may, for the

session of 1900-1901, substitute for the second year's work in Greek one year of History (not General History) or one year of Science. White's First Greek Book will be useful for doing the first year's work.

3. ENGLISH. A. *In General.* No pupil will be accepted in English whose written work is notably defective in point of *spelling, punctuation, idiom, or division into paragraphs.*

B. *English Composition.*—(1) The candidate will be required to write two essays of not less than two hundred words each, on subjects chosen by himself from a considerable number set before him in the examination paper. One of the topics chosen must be taken from the books assigned for general reading under English Literature. (2) In place of the essay on the topic drawn from the books set for general reading, the candidate will be allowed to offer an exercise book containing the first draft of his school compositions, at least six in number, on topics taken from the prescribed course of reading, and certified to by his last English instructor as in his opinion the unaided work of the pupil.

C. *English Literature.*

1. For general reading and composition work :

1900: Dryden's "Palamon and Arcite;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" Goldsmith's "The Vicar of Wakefield;" "Ivanhoe;" De Quincey's "Flight of a Tartar Tribe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal."

1901: Shakespeare's "The Merchant of Venice;" Pope's "Iliad" (Books I, VI, XXII and XXIV); "The Sir Roger De Coverley Papers;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Ancient Mariner;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal;" George Eliot's "Silas Marner."

1902: Same as for 1901.

2. For Minute and Critical Study :

1900: "Macbeth;" "Paradise Lost" (Books I and II); Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

1901: Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's Essays on "Milton" and "Addison."

1902: Same as for 1901.

D. *English Grammar.*—There will be included in the requirement for entrance knowledge of the leading facts of English Grammar, and proper tests of such knowledge will be made a part of the examination.

4. MATHEMATICS. Algebra and Plane Geometry. The equivalent of

Milne's High School Algebra and of Phillips and Fisher's Plane Geometry is required.

5. HISTORY. General History—the equivalent of the work given in Myers' "General History."

GROUP II (A. B.).

1. LATIN. Same as in Group I. See above.
2. ENGLISH. Same as in Group I.
3. MATHEMATICS. Same as in Group I.
4. SCIENCE. One year's work, with laboratory practice in any one of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. HISTORY. (A.) General History (as above in Group I): (B.) History of England and of the United States—the equivalent of the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." For the present the equivalent of the work given in Green's "Short History of the English People" will be accepted in lieu of the requirements in History of England and of the United States.

GROUP III (B. S.).

1. FRENCH OR GERMAN—two years' work.
The two years' work in German, when offered, shall mean the ability to read at sight ordinary prose, to translate simple English sentences into German; and it includes a correct pronunciation of the language. The two years' work in French, when offered, implies the same ability in French as has been described above in German. For the French or German an equivalent amount of Latin may be substituted.
2. ENGLISH. Same as in Group I.
3. MATHEMATICS. Same as in Group I.
4. SCIENCE. One year's work each, with laboratory practice, in any two of the following Sciences: Biology (Zoology and Botany), Physics, Chemistry.

5. HISTORY.—Same as in Group II.

The time to be given to each of the above requirements, and the character of the work required in each subject for admission, are given in detail in the courses outlined for schools approved by the University. See pages 30-34.

Value in Units:

Twelve units are required for admission to any Academic Course. For particulars, see next paragraph. If a unit be defined as a year's work in

a subject with five (5) periods a week in the class room or laboratory, and a period as about forty (40) minutes, then the subjects required for admission to the Academic department have the following values in units: English, 3 units; Latin, 3; Greek, 2; Mathematics, 3; History, 1 or 2; Physics, 1; Chemistry, 1; Biology, 1.

The requirements for entrance by examination to the Academic department, expressed in terms of units, are as follows:

<i>Group I (A. B.).</i>	<i>Group II (A. B.).</i>	<i>Group III (B. S.).</i>
English.....3 units	English.....3 units	English.....3 units
Math.....3 units	Math.....3 units	Math.....3 units
History.....1 unit	History.....2 units	History.....2 units
Latin.....3 units	Latin.....3 units	Fr. or Ger....2 units
Greek.....2 units	Science.....1 unit	Science.....2 units
<hr/>		
Total.....12 units	Total.....12 units	Total.....12 units

In Group III the student may offer for two years of French or German two years of Latin. The University will for the present accept this substitution, but does not recommend it. In case the student presents but one year of Latin, he shall receive credit for that amount and shall then be "not passed" on one year of French or German, which deficiency must be made up in addition to the requirements for graduation. For the session of 1900-1901 the applicant for admission may substitute for the second year in Greek in Group I a second year in History (not General History) or one year in Science. It should be understood, however, that no substitute may be offered for any study unless the student has, in the entrance examination, made a passing grade on the substitute.

To be admitted to the Academic department by examination, the student must pass (70 per cent) on at least ten (10) units. The deficiency of two units may be in one subject or in two. All deficiencies must be made up under the direction of the Professor in charge of that subject on or before the end of the period for entrance examinations the following September. If the student is permitted to make up his deficiency in the University, such work shall not count toward a degree.

Beginning with September, 1901, twelve (12) units without condition will be required for entrance.

In case the student offers advanced work in any subject in lieu of units required for entrance, such substitution will be given due consideration; but students to whom this privilege may be allowed must make up those entrance requirements in which they are deficient.

To the Department of Education:

A student who has been admitted to the Academic department will be permitted to enter the Department of Education.

To the Law Department:

For terms of admission, see announcement of this Department.

To the Department of Medicine:

See announcement of this Department.

To the Schools of Agriculture and Mechanic Arts:

See announcement of these Schools.

To the School of Engineering and that of Architecture:

The requirements for admission to these schools are the same as those to the Academic department, Group III; except that either French, German or Spanish may be offered. But a student conditioned in Mathematics will not be admitted to this School, and if the student substitutes Latin for French, German or Spanish, he must afterwards make up the French, German or Spanish.

Time of Examinations:

Examinations for admission will be held at the University May 24 to June 1, and September 6 to 10, 1900. All persons desiring to enter the University at the opening of the session in the fall of 1900, except those holding certificates of graduation from approved schools and those who have already otherwise fulfilled the entrance conditions, must present themselves at the Registrar's office, room 4, Academic Hall, at 8:30 a. m., Thursday, September 6. They will then receive complete directions as to examinations.

The programme of examinations is as follows:

Thursday, September 6—9 a. m., English; 2 p. m., Mathematics.

Friday, September 7—9 a. m., Latin, French, German, Spanish; 2. p. m., Physics.

Saturday, September 8—9 a. m., Biology, Greek; 2 p. m., General History.

Monday, September 10—10 a. m., English History; 2 p. m., Chemistry.

Acceptance of Grades:

Students who do not hold diplomas from approved schools (pages 26-28), may present their grades in any subject, but the acceptance of these grades in place of an examination in that subject rests wholly in the judgment of the Professor of the subject, except in the case of applicants from other States than Missouri, whose grades may be accepted by the President of the University.

Advanced Standing:

Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance. Of his fitness for advanced work he must satisfy, by examination or otherwise, the Professor of the subject which he elects.

Special Students:

Special students will be admitted to the University without passing the regular examination required for entrance, under the following conditions: (1) They must be at least 21 years of age; (2) they must show good reason for not taking a regular course; (3) they must pass such examination or other tests as shall demonstrate fitness to pursue profitably all the subjects selected by them; (4) they will not be allowed to take work in more than two subjects with such kindred work as the Head Professor may suggest. Special students are expected to do specially good work in the subjects which they choose. If at any period of the session their work becomes unsatisfactory in one or both of the two major subjects, their connection with the University shall be severed by the Dean of the Department. They must take examinations unless they be permitted to enter as Hearers. Such permission will be granted only in rare cases.

ADMISSION FROM APPROVED SCHOOLS.

The University will admit without examination such graduates of an approved school as bring proper credentials of the fact that they are recommended for one of the three Admission Groups (Group III being required for the School of Engineering) by the school authorities and it will admit free of entrance, library and incidental fees for the first year the student graduating from the school with the highest honors.

The diploma will not be accepted as a credential. The student must present a certificate, signed by the Superintendent or Principal, showing that he has completed a course for which the school has been approved. Blank certificates will be furnished by the Registrar upon application.

The following is a list of the approved schools:

Approved Schools.

The three groups of requirements for admission are given on pages 20-23. The figure I after the name of a school indicates that it meets the requirements of Group I (A. B.), in which Greek is included; the figure II that it meets the requirements of Group II (A. B.), without Greek; and the figure III that it meets the requirements of Group III (B. S.).

<i>School.</i>	<i>*Supt. or Principal.</i>
Appleton City Academy, Appleton City, II, III.	G. A. Thellman
Bethany High School, II, III.....	J. R. Hale
Blees Military Academy, Macon, I, II, III.....	F. W. Blees
Bloomfield High School, II.....	J. H. Hughes.....
Bonne Terre High School, II.....	L. N. Gray.....
Boonville High School, I.....	W. A. Annin.....
Brookfield High School, II, III.....	{ J. U. White
	{ H. R. McCullough
Brookfield College, Brookfield, I.....	Harry C. Meyers
Buchanan College, Troy, I.....	E. H. Lay
Butler Academy, Butler, I, II, III.....	Miss E. A. Ludwig
Butler High School, I, II, III.....	R. L. Walker
Calro (Ill.) High School, II, III.....	T. C. Clendenen
Cameron High School, I, II, III.....	B. Riggs
Carrollton High School, II, III.....	{ E. H. Stroeter
	{ Mrs. A. R. Quisenberry
Carthage High School, II, III.....	{ W. J. Stevens
	{ Edwin Gray
Carthage Flitting School, Carthage, I.....	L. E. Robinson
Chillicothe High School, I, II, III.....	{ Oliver Stigall
	{ John W. Barton
Christian College, Columbia, II, III.....	{ Mrs. W. T. Moore
	{ Mrs. L. W. St. Clair.....
Clarksburg College, Clarksburg, I, II.....	Warren I. Moore
Clinton High School, II, III.....	{ F. B. Owen
	{ H. L. Green
Columbia High School, I, II, III.....	{ R. H. Emberson
	{ E. B. Canthorn
Columbia Normal Academy, I, II, III.....	Geo. H. Beasley
Culver Military Academy, Culver, Ind., I, II, III	A. F. Fleet
East St. Louis (Ill.) High School, II, III....	John Richeson
Edina High School, III.....	{ A. R. Coburn.....
	{ Mrs. A. X. Brown
Fort Scott (Kan.) High School, II, III.....	{ D. M. Bowen
	{ W. C. Lansdon
Fort Smith (Ark.) High School, I, II, III.....	{ J. L. Holleway
	{ B. W. Torreyson
Gallatin High School, II, III.....	A. R. Alexander

*Where two names are given after the name of a High School, the first is that of the Superintendent, and the second that of the Principal.

<i>School.</i>	<i>Supt. or Principal.</i>
Greenfield High School, II.....	{ I. N. Evrard
Greenville (Miss.) High School, II, III.....	{ Frankie Eastin
Hannibal High School, I, II, III.....	E. E. Bass.
Harrisonville High School, II, III.....	{ R. B. D. Simonson.....
Higginsville High School, II, III.....	{ Miss Gertrude Ashmore.
Iberia Academy, I.....	{ A. T. Fisher
Independence High School, I, II, III.....	{ J. Q. Cope
Jefferson City High School, II, III.....	W. C. Sebring
Joplin High School, II, III.....	G. B. Smith
Kansas City High School, I, II, III.....	{ G. M. Hollday.....
Kansas City Manual Training School, II, III..	{ Wm. L. C. Palmer
Kansas City (Kan.) High School, I.....	{ John W. Richardson ...
Kemper Family School, Boonville, I, II, III...	{ S. A. Baker
Keokuk (Iowa) High School, II, III.....	{ J. D. Eliff.....
Kidder Institute, Kidder, I.....	{ J. M. Gwinn
King City High School, I.....	{ J. M. Greenwood
Kirksville High School, II.....	{ E. C. White
Kirkwood High School, I, II, III.....	G. B. Morrison
Lamar High School, II, III.....	{ L. E. Wolfe.....
Lancaster High School, II, III.....	{ Geo. E. Rose
Leavenworth (Kan.) High School, I, II, III...	T. A. Johnson
Lexington High School, II, III.....	Geo. E. Marshall
Louisiana High School, II, III.....	G. W. Shaw
Macon City High School, II, III.....	G. F. McKinney
Marionville Collegiate Institute, I, II.....	{ C. S. Brother
Marshall High School, I, II, III.....	{ O. H. Lind
Mary Institute, St. Louis, I, II, III.....	R. G. Kinkead
Maryville High School, II, III.....	H. C. Richmond
Memphis High School, III.....	A. H. Smith
Mexico High School, II, III.....	W. A. Evans
Miami High School, II, III.....	H. D. Demand
Michigan Military Academy, Orchard Lake, Mich., I, II, III.....	{ A. W. Riggs
Milan High School, II.....	{ R. R. Rowley
Moberly High School, II, III.....	{ W. F. Jamison
Monroe City High School, II, III.....	{ Henry King
	John Turrentine
	{ T. E. Spencer
	{ L. M. Nelson
	E. H. Sears
	{ B. F. Duncan
	{ C. A. Hawkins
	A. P. Settle
	{ D. A. McMillan
	{ Miss Martha Shea
	{ E. C. Fisher
	{ G. W. Carpenter.....
	J. Sumner Rogers
	W. C. Thompson
	{ J. A. Whiteford
	{ J. C. Lilly
	R. S. Nichols

<i>School.</i>	<i>Supt. or Principal.</i>
Montgomery City High School, II, III.....	{ W. C. Williams { Dora Iams
Mound City High School, II, III.....	J. P. Coleman
Mt. Vernon Academy, Mt. Vernon, I.....	Elizabeth Park
Nevada High School, II, III.....	{ J. C. Pike { W. E. Veerkamp
North Mo. Academy, Salisbury, I.....	G. C. Briggs
Odessa High School, II.....	L. J. Mitchell
Oregon High School, II, III.....	D. L. Roberts
Paola (Kan.) High School, I.....	F. W. Allin
Paris High School, I, II, III.....	W. D. Christian
Poplar Bluff High School, II.....	John T. Withers
Princeton High School, II, III.....	G. W. Brown.....
Quincy (Ill.) High School, I, II, III.....	Wm. F. Gelger
Rich Hill High School, II.....	G. W. McGinnis
Richmond High School, II, III.....	{ B. G. Shackelford { J. E. Dunn
Rockport High School, II, III.....	W. W. Gallaher
Rogers Academy, Rogers, Ark., II.....	Rev. J. M. Scraggs.....
St. Joseph High School, I, II, III.....	{ Edw. B. Neely { C. E. Miller
St. Louis High School, I, II, III.....	{ F. Louis Soldan { W. J. S. Bryan.....
St. Louis Manual Training School, III.....	C. M. Woodward
Sedalla High School, I, II, III.....	{ G. V. Buchanan { J. D. Wilson
Shelbina High School, I, II, III.....	{ S. E. Stout { H. A. Hill
Shelbyville High School, II, III.....	Ira Richardson
Slater High School, I, II, III.....	{ J. M. Bailey { Edward Cannell
Smith Academy, St. Louis, I, II, III.....	Chas. P. Curd
Springfield High School, II, III.....	{ J. Fairbanks { E. E. Dodd
Sweet Springs High School, II.....	M. A. O'Rear
Trenton High School, II, III.....	{ L. L. Tomlin { B. F. Guthrie
University Academy, Columbia, I, II, III.....	J. B. Welch
University Military School, Mobile, Ala., I.....	Julius T. Wright
Vandalla High School, I.....	T. B. Ford
Walther College, St. Louis, I, II.....	A. C. Burgdorf
Warrensburg High School, I, II.....	{ J. M. Gordon { J. A. Robeson
Watson Seminary, Ashley, I.....	A. R. Coburn
Webb City High School, II, III.....	{ A. G. Young { J. W. Storms
Webster Groves High School, II, III.....	Sarah J. Milligan
Wentworth Military Academy, Lexington, I, II.....	Sanford Sellers
West Plains College, West Plains, I.....	J. T. Outen
Westport High School, II, III.....	S. A. Underwood
Windsor High School, II.....	Ignatius McCutchan.....
Woodson Institute, Richmond, I, II, III.....	

A certificate from any one of the following institutions will be accepted in lieu of entrance examinations for Law, School of Agriculture, and School of Mechanic Arts for session of 1900-1901.

Albany High School.	Grandin High School.
Appleton City High School.	Granby High School.
Ash Grove High School.	Hermann High School.
Ashland High School.	Holden High School.
Aurora High School.	Hamilton High School.
Avalon College, Trenton.	Hardin College, Mexico.
Baptist College, Webb City.	Hopkins High School.
Belton High School.	Hosmer Hall, St. Louis.
Bevier High School.	Howard Payne College, Fayette.
Bishop Robertson Hall, St. Louis.	Hume High School.
Bollivar High School.	Humphreys Academy, Humphreys.
Bonne Terre High School.	Huntsville High School.
Buffalo High School.	Jamesport High School.
Bowling Green High School.	Kahoka High School.
Brunswick High School.	Kingston High School.
Bellevue Collegiate Institute, Caledonia.	Kirkwood Military Academy, Kirkwood.
Carleton College, Farmington.	Lamar College, Lamar.
Cartersville High School.	La Plata High School.
Central Female College, Lexington.	Lee's Summit High School.
Chillicothe Normal and Business Institute, Chillicothe.	Lamonte High School.
California High School.	Lathrop High School.
Canton High School.	Lebanon High School.
Carruthersville High School.	Liberty High School.
Centenary College, Palmyra.	Liberty Female College, Liberty.
Centralla High School.	Lindenwood College, St. Charles.
Central Wesleyan College, Warrenton.	Linneus High School.
Charleston High School.	Marceline High School.
Christian Brothers College, St. Louis.	Marshfield High School.
Christian Orphan School, Fulton.	Missouri Wesleyan Institute, Cameron.
Christian College, Weaubleau.	Morrisville Academy, Morrisville.
Clarence High School.	Mountain Grove High School.
Corder High School.	Malden High School.
Cottey College, Nevada.	Marvin Collegiate Institute, Fredericktown.
Dadeville Academy, Dadeville.	Maryville Seminary, Maryville.
De Soto High School.	Megqueler Seminary, Boonville.
Edina High School.	Memphis High School.
Evangelical Lutheran Parochial School, Altenburg.	Northwest Missouri College, Albany.
Elsberry High School.	Neosho High School.
Eldorado Springs High School.	New London High School.
Excelsior Springs High School.	Odessa College, Odessa.
Fayette High School.	Osceola High School.
Ferguson High School.	Otterville College, Otterville.
Fulton High School.	Perry High School.
Grand River College, Gallatin.	

Pike College, Bowling Green.	St. Vincent's College, Cape Girardeau.
Presbyterian College, Independence.	Salem High School.
Princeton High School.	Savannah High School.
Pierce City Baptist College, Pierce City.	Scarritt Collegiate Institute, Neosho.
Pierce City High School.	Stanberry Normal, Stanberry.
Plattsburg College, Plattsburg.	Stanberry High School.
Plattsburg High School.	Stephens College, Columbia.
Pleasant Hill High School.	Tarkio High School.
Presbyterian College, Avalon.	Thayer High School.
Rolla High School.	Tipton High School.
Ridgeway High School.	Toensfeldt Educational Institute, St. Louis.
Rugby Academy, St. Louis.	Unionville High School.
St. Cecelia's Seminary, Holden.	Versailles High School.
Seneca High School.	Webster Groves High School.
Slakeston High School.	Wellsville High School.
Southwest Baptist College, Bollivar.	West Plains High School.
Sturgeon High School.	Willow Springs High School.
Synodical College, Fulton.	Woodland College, Independence.
St. Charles College, St. Charles.	
St. Louis Seminary, Jennings.	
St. Paul's College, Concordia.	

The Missouri School for the Deaf and Dumb, at Fulton, has been approved for the College of Agriculture and Mechanic Arts, and the graduates will be admitted without examination to the first year's course in Agriculture and Mechanic Arts.

Normal Schools:

Graduates of the three State Normal Schools in the advanced Latin course of study as recently established will be admitted to any Department of the University without examination and without condition. Graduates of the Kirksville Normal School will receive moreover the following credits towards any degree conferred by the University for which such work is accepted:—English 6 hours; Latin 6 hours; Mathematics 4 hours; History 2 hours.

Graduates of the Warrensburg Normal School will receive the following credits:—English 6 hours; Latin 6 hours; Mathematics 3 hours; History 4 hours; Physics 3 hours.

Examiner of Schools:

The position of Examiner of Schools has been established by the Board of Curators to facilitate the work of bringing the secondary schools into close connection with the University. Mr. Wm. M. Hoge, Boonville, Mo., entered upon the duties of this office on January 1, 1900.

CONDITIONS FOR THE APPROVAL OF SCHOOLS.

No school will be approved until it has been visited by the Examiner

and his report has been adopted by the University Committee on Approved Schools.

SUMMARY OF REQUIREMENTS FOR APPROVAL.

<i>Group I (A. B.)</i>	<i>Group II (A. B.)</i>	<i>Group III (B. S.)</i>
English.....3 yrs.	English.....3 yrs.	English.....3 yrs.
Algebra.....2 yrs.	Algebra.....2 yrs.	Algebra.....2 yrs.
Plane Geom....1 yr.	Plane Geom....1 yr.	Plane Geom....1 yr.
Gen. History...1 yr.	Gen. History...1 yr.	Gen. History...1 yr.
Latin.....3 yrs.	English and Advanc- ed U. S. Hist..1 yr.	English and Advanc- ed U. S. Hist..1 yr.
Greek.....2 yrs.	Latin.....3 yrs.	French or Ger..2 yrs.
	Biology, Chem., or Physics...1 yr.	Biology, Chem., or Physics...2 yrs.

English and advanced United States History must follow and not precede General History. A full year's work in English History may be substituted for this requirement.

The work in Biology, Chemistry, or Physics must include individual laboratory work by the student. In Group III one year's work in each of two sciences must be given.

In Group III, for the present, two years' work in Latin may be substituted for the two years of French or German, but the substitution is not recommended.

In Group I an additional year of History may be substituted for the second year of Greek, but the substitution is not recommended.

It is earnestly hoped that all the Secondary Schools of Missouri will soon be able to make their courses four years long. Other branches of study usually taught in Secondary Schools are not mentioned here. The three years' Course outlined prescribes merely the minimum required by the University for entrance to the Academic department, and to the courses in Engineering and Architecture.

1. *Latin*, not less than five (5) periods a week, continued not less than three (3) years.

In this time it is expected that the student will acquire such a vocabulary and such a knowledge of inflections and syntax as to be able to read readily simple Latin prose, with accurate quantitative pronunciation of the words. The best method of reaching these results can not be given here. They will be found fully stated in the "Report of Committee on Secondary Schools" in the section on Latin. It may be said, however, that correct pronunciation in the teacher is indispensable to correct pronunciation in the pupil, and that in the acquisition of a vocabulary and the mastery of inflections, nothing can take the place of frequent reviews.

It is expected that the student in three years will read five books of Caesar's Gallic War and four of Cicero's Orations. For two books of the Gallic War, eight books of Eutropius or an equivalent in time of the *Viri Romae* may be substituted where it is preferred.

If the students are immature, it will be found best to use some simple beginner's book, and to follow this by Eutropius or *Viri Romae* as a bridge to Caesar. If, however, the students are mature, it will be found that no

bridge to Caesar is needed, provided that some strong beginner's book is used and the students are required to master it before taking up Caesar.

The reading should be accompanied by a careful and systematic review of grammatical forms, and by a study of the leading principles of syntax. At least one exercise a week should be given to rendering English into Latin. The Roman method of pronunciation is strongly recommended, and teachers are urged to give strict attention to accurate pronunciation according to quantity from the outset. Students will be admitted who have not been trained in the Roman method; but they will work at a great disadvantage throughout the entire course. The Mythology of Greece and Rome and the history of the Roman people should be carefully taught. Map-drawing is valuable for impressing upon the mind the geography of the Ancient World.

2. *English*, not less than five (5) periods a week, continued not less than three (3) years. It is recommended that one-half of the time allotted to English be given to the study of literature, by which is meant not the study of a manual on the history of literature, but literature itself in the selected works of representative authors. Masterpieces, as a whole, suited to the attainments of the class, should be read in class and carefully examined, while other works may be assigned as collateral reading, of which written reports should be required.

In the first year, along with the literature, frequent practice in Composition, with or without a text-book on Rhetoric, is strongly urged.

In the second year, the literature is to be continued throughout, and with the exercises in Composition, formal Rhetoric may be introduced, or if previously begun, continued. In the teaching of Composition and Rhetoric, chief emphasis should be thrown upon practice in writing. If formal Rhetoric is taught as a separate discipline, it should be of an elementary character, and contributory to the Composition.

In the third year, along with literature and composition, grammar, based on historical principles, might be profitably studied. In case English is extended through four years, such grammatical study, in our judgment, should be postponed until the last year.

In the fourth year, in connection with a wider range of reading in literature, an outline or syllabus or a brief history of the literature may be conveniently used, but, possessing little or no culture value, it should always be subordinated to the study of literature itself, and reserved, if used at all, for the last year of the course.

If only three years be given to English, the course outlined for these three years will have taken into view English (1) as a means of expression, (2) as a literature, (3) as a language—all so intimately con-

nected, however, that the proper study of each will bear indirectly upon the other two.

NOTE.—Excellent and inexpensive editions of English and American Classics are now offered by many of our publishing houses. The teacher of English will, doubtless, have a preference for one or another of these series, or for some works of one series and some of another.

3. *Mathematics*, not less than five (5) periods a week, continued not less than three (3) years, and devoted exclusively to Algebra and Geometry. Any other study in Mathematics given in addition to these must be given in additional time. In these three years it is expected that the student will finish Algebra and Plane Geometry. We require the full equivalent of what is contained in Milne's High School Algebra and Phillips and Fisher's or Bowser's Plane Geometry. Bright students, under good instruction, will be able to finish in three years the Algebra, Plane Geometry and several books (if indeed not the whole) of Solid Geometry. For the fourth year we recommend that Solid Geometry be completed, and also Plane Trigonometry.

4. *Science*.—It is expected that not less than five (5) periods a week for an entire year be given to each of two sciences. Of the five periods, at least three (3) should be devoted to laboratory work. For this no outside preparation is required of the pupil. The remaining periods may be given to text-book work and lectures and experiments illustrating the text. The two Sciences must be taken from this group—Biology (Botany and Zoology), Physics and Chemistry. If Biology be chosen half a year may be given to Botany and half a year to Zoology; but we recommend that the whole year be given to either one or the other of these branches of the subject. We recommend that every school teach all three of these Sciences, and moreover provide good instruction in Physical Geography and Meteorology.

5. *History*, not less than five (5) periods a week for two (2) years. The first year shall be devoted to General History equivalent to the work given in Myers' General History. The second year shall be devoted to the History of England and of the United States equivalent to the work given in Ransome's "A Short History of England," and Johnston's "The United States—Its History and Constitution." For the present a year's work in the History of England, the equivalent of the work given in Green's "Short History of the English People," will be accepted in lieu of the second year's requirements.

It is impossible to understand the life, the literature, or the institutions of the ancient world without an accurate study of Mythology. We therefore recommend that every school make provision for this most important study. Some schools may see fit to combine it with the study of History, others with that of Literature, and others may prefer to give four periods a week to Latin or Greek, and the fifth period of each week to Mythology.

Other schools may provide for it in other ways. But, in our opinion, no school should, under any condition, omit adequate treatment of the subject. There are some excellent text-books. We especially recommend Guerber's "Myths of Greece and Rome." Valuable auxiliary reading may be found in Church's Stories from Homer, Virgil, Herodotus, the Greek Tragedians, etc. Any school would be amply repaid by adding to its library, without further inquiry, any book of stories bearing the name of Alfred J. Church. Some of them are in Macmillan's School Library, and most of them are published by Dodd, Mead & Co., New York. The teachers of the classics find in them quite as much pleasure as their pupils.

6. *Greek*, not less than five (5) periods a week for not less than two (2) years.

In this time the student is expected to learn thoroughly the declension of nouns and adjectives, the conjugation of verbs, and the ordinary principles of syntax. He should be able to read with facility ordinary Greek prose, such as Xenophon's *Anabasis*, and to translate easy sentences from English into Greek. The knowledge of accent must be insisted on. To secure this end, we recommend for the first year:

White's First Greek Book and Gleason's Gate to the *Anabasis* (Ginn & Co., Chicago.)

For the second year:

Goodwin's Greek Grammar (Ginn & Co., Chicago); Xenophon's *Anabasis* (three books), Harper and Wallace (American Book Co., Chicago); Harper and Castle's Greek Prose Composition.

This requirement is made of those schools only which desire to meet the requirements of Group I (A. B.).

Any school that gives two years' instruction in Greek, as outlined above, may omit all instruction in science; but we strongly recommend that every school, besides teaching Greek, give at least one year to thorough work in at least one of the Sciences mentioned above under No. 4.

7. *Modern Languages*.—Schools which prepare students for Group III (B. S.) should give two years' work in German or two years' work in French.

The requirements in French or German represent an amount of knowledge which should be gained by two years of consecutive study, five times a week. Thorough acquaintance with the elements of the grammar is of course expected. In addition, a considerable amount of proficiency in translating at sight into English will be required. To obtain this proficiency, students must have careful and systematic training in reading at sight, and this should be begun during the first months of study. In addition to the above, a good pronunciation is insisted on.

In German, Joynes-Meissner's Grammar, and in French, Chardenal's are the books adopted by the State. As for texts, nearly all the publica-

tions of the following firms are recommended as excellent: Ginn & Co., Holt & Co., Heath & Co., Allyn & Bacon, W. R. Jenkins, Macmillan, Christopher Sower & Co. (Philadelphia).

We earnestly recommend that under no circumstances shall any school require of its pupils more than 20 periods a week of work demanding preparation. We think less than this advisable. Ample time should be given for reading, and every secondary school should contain a good library as well as good laboratories.

By a "period" we mean forty minutes of time devoted to actual teaching, with 5 minutes more for changing class—the total 45 minutes.

By "session" we mean about 9 months.

This is all in amount that for the present at least the University requires for approval; but as to teachers, we strongly recommend that none be employed but graduates of Universities or Colleges of unquestionable reputation, or those who have reached equivalent attainments. It is understood that the employment of inefficient teachers at any time will justify the University in withdrawing its approval.

Schools should provide rooms, fixtures, and apparatus suitable for laboratory work, without which it is impossible to teach science well, but it should be remembered that in the equipment of a laboratory the first step is to secure a thoroughly competent teacher. A well selected library, together with maps for class room work, is essential. A library may be rather small and still good. If possible, a librarian should be employed to do nothing else but keep the books and help the pupils in their choice of reading matter.

If it be desired, the University will gladly forward a pamphlet containing information about the proper equipment of laboratories and libraries. Professors will be glad to supply additional information.

BUILDINGS AND EQUIPMENT.

Location:

The University of the State of Missouri is located near the center of the State, in Columbia, a town of about 6,000 inhabitants, situated half way between St. Louis and Kansas City.

It is conveniently reached from the east, north and west by the Wabash Railroad and connecting lines. The opening of the Missouri Midland Railroad renders access to it easy from the south and southwest. This road connects with the Missouri, Kansas and Texas Railroad at McBalne, and affords a direct route to Columbia to persons living on that line, and to those living on the Missouri Pacific, Frisco, and Kansas City, Fort Scott and Memphis Railroads.

The surrounding country is elevated, well drained and diversified. It is a limestone region, remarkable for its healthfulness. The University Campus includes 82 acres of undulating ground in the southern part of the town. The Experiment Farm lies one square south of the Campus, and comprises 768 acres. The Horticultural grounds (a part of the Farm) are one square east of the Campus and include about 80 acres.

Buildings:

The University has the following buildings:

The Observatory, Medical building, four Club-houses, Agricultural Farm buildings, Experiment Station, Greenhouse (new), Law building (new), Chemical Laboratory (new), President's house (1867), Museum (new), Agricultural College (1871), Engineering (new), Mechanic Arts (new), Power-house (new), Academic Hall (new), Hospital (new).

We give a brief description of our new buildings:

The Law building, 68x114 feet, contains two stories and a basement. Its library rooms are large and well lighted.

The Chemical Laboratory, 182x90 feet, is equipped with a system of exhaust ventilation capable of effecting a change of air every ten minutes.

The Museum, 140x100 feet, contains in the center, the Museum proper, 87x100 feet, two stories high, and entirely fire-proof. On the right is the department of Geology and Mineralogy, and on the left that of Botany and Zoology. These wings have six and eight rooms respectively, one of which is a large lecture hall, 28x40 feet.

The Engineering building, 145x78 feet, is arranged for Physics, and for Civil, Mechanical, and Electrical Engineering. It has 82 rooms, in addition to two lecture halls, 28x40 feet.

The Mechanic Arts building, 108x117 feet, has six shop-rooms, 40x40 feet; an exhibit hall, 25x40 feet; two offices, 16x18; one drawing-room, 40x40; store-rooms, an engine-room, etc. The machinery is driven by a 60-horse power Corliss engine supplied with steam from the power-house. The building is lighted from a dynamo in the basement, and is thoroughly ventilated by a fan.

The Power-house, 72x86 feet, contains a plant of five boilers aggregating 600-horse power. From this plant all the buildings are heated by a system of brick tunnels six and a half feet high by four broad. Through these tunnels are carried steam and water pipes and electric light wires.

The new Horticultural Laboratory consists of a central building 80x30 feet and two wings, each 22x30 feet. It is heated by steam, and is so arranged that each compartment maintains a different temperature. Thus it is possible to grow plants that require various degrees of heat. The boiler-house is a separate building, of such size and arrangement that additional steam may be put in for heating three or four times the present

area under glass. The entire laboratory is constructed after approved modern methods. It has stone foundation below ground, pressed brick walls to a height of three feet, T iron frame filled in with white pine, grooved sash bars, and best American A glass. The glass walls of the main portion rise eight feet above the brick, and the roof slopes upward to twenty-seven feet above the ground floor in the center, giving room for tall tropical plants. The walks between the benches are of granitoid. It is water-proof.

The new Academic Hall, 819 feet long, with an auditorium in one wing and a library in the other, contains three stories, besides a basement seven feet above ground. It is provided with appliances for direct and indirect heating, with fans for ventilation, and with thermostats for the regulation of temperature. The Auditorium, 74x118 feet, seats comfortably 1,500 people. The apartments (six in number) for the exclusive use of young women contain everything conducive to study, comfort, and indoor exercise.

The principal buildings of the University are grouped around a quadrangle near the center of the Campus. The quadrangle is open toward the north, with department buildings on the sides, and the large Academic Hall closing the south end. In the center are the grand old Ionic Columns that supported the original Academic Hall erected in 1840 and destroyed by fire on January 9, 1892. The buildings are substantially built of red pressed brick, with stone trimmings. They have division walls of brick, roofs of slate, ceilings of cement laid on steel laths, and floors of tile or of polished maple. They are heated by steam, lighted by gas and electricity, and are all supplied with water by the city water-works. The University has built at its own expense an admirable system of sewers.

Hospital:

In 1898 Mr. Wm. L. Parker, of Columbia, offered \$15,000 toward the construction of a Hospital on the condition that \$10,000 should be contributed from some other source. The 40th General Assembly met the condition by an appropriation of \$10,000, and the building is now in process of erection. The corner stone was laid on Dec. 19, 1899, and the Hospital will be ready for use at the opening of the next session. It will cost \$25,000 exclusive of equipment. This building will greatly strengthen the Medical College and add much to the comfort and safety of students who become ill.

Libraries:

At Columbia the University Libraries contain 32,900 bound volumes.

Besides, the School of Mines has 3,500 bound volumes, carefully selected. The best literary and scientific periodicals are taken, and a large number are given yearly (see Index under "Gifts to the University"). The Law Library, of about 5,891 volumes (included in the above estimate), is in the Law building. The Medical Library receives regularly a number of medical periodicals. Moreover, each Chair has its special technical library and magazines.

Laboratories and Museums:

Facilities for practical instruction in the sciences are provided in the museums of Zoology, Geology, and Agriculture, and in various laboratories. At Columbia the University has now in regular use twenty-five laboratories of science and technology, and five drawing-rooms, one general and four special. The laboratories are as follows:

CHEMISTRY: Five Laboratories—General Chemistry (1st year), Qualitative Analysis, Quantitative Analysis, Organic Chemistry, Agricultural Chemistry and Experiment Station work.

PHYSICS: Three Laboratories—For work of different grades, besides small rooms for special work.

MINERALOGY AND GEOLOGY: Two Laboratories.

ASTRONOMY: A well equipped Observatory for practical instruction and observation on the part of the students. See Index under "Observatory."

BIOLOGY: Four Laboratories—One for General Biology, one for Botany, and two for advanced work of various grades.

ENTOMOLOGY: One Laboratory.

PHYSIOLOGY: One Laboratory.

ANATOMY: One Laboratory.

HISTOLOGY: One Laboratory.

BACTERIOLOGY: One Laboratory.

PATHOLOGY: One Laboratory.

HORTICULTURE: One Laboratory.

ENGINEERING: Three Laboratories—For Civil, Electrical, and Mechanical Engineering, besides smaller rooms for special work.

SHOPS: Five—One for bench work in wood, one for Sloyd, a forge room, a wood lathe room, and a machine shop. See Index.

DRAWING ROOMS: One for general drawing and four for special drawing in Civil, Electrical and Mechanical Engineering and Architecture, respectively.

Each of the Laboratories, Museums, Shops, and Drawing Rooms mentioned above occupies at least one room, and in some cases more.

Experiment Station:

The Agricultural Experiment Station is on the Horticultural grounds. Bulletins giving the results of experiments are issued at intervals. The Station is provided with an outfit of meteorological instruments, and daily observations are made by an officer of the U. S. Weather Bureau. See Index, "Experiment Station."

Club-Houses:

The University has four club-houses which can lodge 170 young men and can furnish meals at small cost to about 400. Two of these are substantial brick buildings on the Campus, affording accommodations for about 140 students. The other club-houses are wooden buildings, and have rooms for about 80 students.

For information about the buildings and equipment of the School of Mines and Metallurgy at Rolla, see page 61.

ORGANIZATION AND GOVERNMENT.

Organization:

The University Council consists of the President, Deans, Professors and Assistant Professors, in all the Departments of the University. It is the highest organized body of the Faculty. Each Department of the University has its special Faculty, consisting of the Professors and other Teachers who give instruction in it.

The President is the executive head of the University, and is a member of all the Faculties.

Lectures and Recitations:

Lectures and recitations in all Departments, except that of Law, are held on six days in the week.

Religious Exercises:

Religious exercises are held every morning. They consist of a hymn by the choir, readings from the Old and New Testaments, a brief prayer, and a closing hymn by the congregation.

These exercises are made as attractive and beneficial as possible. During every session distinguished members of various churches have been invited to preach to the students and Faculty.

In Columbia there are churches of nearly all the prominent denominations. The University advises its students to attend regularly the services at the churches of their parents. The students maintain an efficient chapter of the Young Men's Christian Association, and one also of the

Young Women's Christian Association. (See "Societies" below.) The University has much of moral and religious influence, but is non-sectarian.

Provisions for Young Women:

All Departments of the University are open to women. In the lecture-rooms they receive the same instruction and meet the same intellectual requirements as the young men. There are special rooms—six in number—furnished with admirable equipment for health and comfort, and presided over by a matron, who has charge of all the young ladies in attendance. One of these rooms is fitted up as a gymnasium, containing all the appliances necessary for physical culture. During lecture hours the young ladies, when not attending lectures, are expected to be in their waiting-rooms, or in the University library, or at their respective homes.

The University has no boarding department; but many of the families of Columbia take boarders, and students find no trouble in securing, at reasonable rates, the comforts and refinements of home life.

Discipline:

In the government of the University, the President and the Faculty rely chiefly upon the sense of duty of the student corps. The student is expected to pursue his studies with diligence, to attend classes regularly, and to live in the exercise of morality and good behavior. The removal of those who fail to meet these requirements is demanded in the interest of the University and the better class of students. Students are under the direct supervision of the University only when on the Campus, but they are responsible for their conduct wherever they may be.

Directions for New Students:

1. New students will first present themselves for examination. This should be done *before paying entrance fees*. For dates of examinations, see the Calendar, page iii. . .

2. After passing the entrance examinations, the students must pay to the Treasurer the amount required. See "Expenses," page 48.

3. The Treasurer's receipt should be at once presented to the Proctor, who will enroll the student's name and give to him his class-card, with instructions how to have it filled.

4. If assistance is needed in obtaining board, application should be made to the Proctor.

5. For special directions to Academic students, see page 73.

STUDIES.

Regulations in Regard to Studies:

No student in any Department of the University may have more than 18 hours a week in the lecture room.

Academic students are expected to spend not less than 12 nor more than 16 hours a week at lectures or recitations. But students who are candidates for the Elementary Teacher's Certificate may take three hours of Pedagogy and 3 hours of Industrial work in addition to 12 hours of Academic work. And students who are candidates for the Life Certificate may take 3 hours of Industrial work in addition to 15 hours of Academic work for each year.

One hour in the lecture-room is considered equal to two and one half in the laboratory, the drawing-room, the shop, and the commercial-room.

Class-cards taken out at entrance must be properly filled and deposited with the Registrar, within three days after they have been issued.

Students that enter the University in the first semester and wish to make any change in their class-cards for the second semester, are required to take out their cards again in the last week of the first semester, and to return them to the Registrar duly filled and approved on or before the first day of the second semester. Students that fail to comply with this requirement must pay a fee equal to one-half of the regular fees for the session, unless the delay has been clearly unavoidable.

Studies in other Departments:

Students registered in one Department may take work in other Departments for which, in the judgment of the Professors concerned, they are prepared; but only with the consent of the Dean of the Department in which the student is registered. Students taking work in another Department than that in which they are registered are subject as respects this work to the rules of the Department in which the work belongs.

1. Academic students may take Anatomy or Physiology, or both, in the first year of the Medical course, or Hygiene in the second year; Drawing, Book-keeping, Shop-work, and any other work not below the Freshman (Academic) grade, in the College of Agriculture and Mechanic Arts; and any instruction offered in the Department of Education. None of this instruction, however, shall count toward any Academic degree unless it is allowed in the regulations respecting studies for such degree. See page 74.

2. Law students may take any instruction offered in other Departments of the University, but it shall not count toward any degree in Law.

3. Medical students in the first year may take any work offered in the Academic department, and the College of Agriculture and Mechanic Arts; and in their second and third years, any work offered in the University; but such work shall not count toward the degree of M. D. unless it is included in the regular Medical course.

4. Students in the Schools of Agriculture and Mechanic Arts may

elect in the Junior years the courses in Physiology and Hygiene from the first year of the Medical course, and from the Academic department or the Department of Education, any subject for which they are prepared, and which is germane to the work of the Schools. Electives taken as indicated count toward the degree of Bachelor of Science in Agriculture.

5. Engineering students may take in their Freshman and Sophomore years any instruction offered in the Academic department, the Department of Education, or the Schools of Agriculture and Mechanic Arts, or Anatomy and Physiology in the first year of the Medical course; and in their Junior and Senior years they may take anything offered in the University; but such instruction shall not count toward a degree in Engineering.

6. No work shall count toward the Life Certificate to teach, except so far as it may conform to the requirements specified in the announcement of the Department of Education.

7. Instruction in Military Science and Tactics is open to students in all Departments.

8. Students may take work in the Summer School (see Appendix) and receive a maximum credit therefor of six hours for a term of six weeks or twelve hours for the session of twelve weeks. No more credit for summer work is allowed.

Graduate Studies:

A number of graduate courses are offered. For details see announcement of Graduate department.

Examinations:

1. Examinations at the end of each semester close the studies pursued to that point. Re-examination for change of grade when the grade is 70 or more shall not be allowed in any case. For all successful examinations for the removal of conditions, i. e., where the first grade received is above 50 and below 70, the grade of 70 shall be given unless the student takes the subject again in the class.

2. All special examinations, except for change of grades, and the acceptance of grades from other institutions, are in the discretion of the Professors.

Class Honors:

The honor of valedictorian is awarded in the various Departments to that student who has the highest grade.

In granting degrees, the following distinctions are made: Students graduating with a final average grade of 70 and below 95 receive the

diploma; those graduating with a final average grade of 95 or more may have inserted in their diplomas *cum laude*, *magna cum laude* or *summa cum laude*, in accordance with the quality of their work. But misconduct or unexcused absences may forfeit the right of any student to such distinction.

Reports:

From all Departments, except those of Law and Medicine, reports of students are sent, at the close of each semester, to the parents or guardians, showing their standing in the subjects that they are pursuing. The reports of students in Law and Medicine are sent out at the close of the session.

EXPENSES.

Fees and Deposits:

Students in the Academic department, in those of Education, and Medicine and in the various Schools of the College of Agriculture and Mechanic Arts (including Engineering and Architecture) pay an entrance, library, and incidental fee of \$5.00.

Law students (regular or special) pay \$50 a year for the Junior and Senior years and \$5.00 for the graduate year. Students entering the Junior class late will not be entitled to any reduction in the amount of the fee, except as stated below. Books cost about \$35 a year.

State Cadets in the Academic department or in the College of Agriculture and Mechanic Arts, including the School of Engineering and that of Architecture, pay no entrance, library, and incidental fee, but make all the laboratory and other deposits required of other students. If they take any study in Law or Medicine whatsoever, they must pay the full fees of that Department.

Graduate students in any Department of the University pay an entrance, library and incidental fee of \$5.00 a year, and make all the usual deposits, including laboratory deposits if they take laboratory work. If they take undergraduate work in any of the classes in Law where tuition is charged, they must pay the full fees in that Department. Graduates of colleges and other universities will not be classed as graduate students if they take undergraduate work only.

No part of the entrance, library and incidental fee (\$5.00) is remitted for late entrance or refunded for withdrawal.

Students in Law who pay the full tuition fee of \$50 and who withdraw before the opening of the second semester, will, upon application, have refunded to them in the earlier days of March one-fourth ($\frac{1}{4}$) of the fees for the whole session; but such students must, before the

close of the first semester, file with the President written application addressed to the Board of Curators for the refunding of that part of the fees. Students that enter during the second semester in Law will pay three-fourths ($\frac{3}{4}$) of the fees for the entire session.

In all the laboratories except those of Chemistry, and in certain departments of the Shop, a deposit of \$5 for a session, or any part thereof, is required. In Chemistry the deposit is \$5 for each semester. This deposit, less deduction for loss arising from cost of material or from injury, is returned at the end of the laboratory course in any session. Only Fellows are exempt from making these deposits—this exemption applying only to those laboratories in which they give instruction.

In all cases where the original deposit does not cover the cost of material used and the damage to property, an additional charge will be made which shall be sufficient to cover the excess of material and damage over the original deposit. Where damage or loss is suffered by a laboratory it will be assessed against the deposits of the students using the laboratory at the time of the damage or loss, unless such damage or loss can be traced to some individual student or students.

The charge for a diploma is \$3 and for a certificate \$2.

Laboratory deposits and rent of rooms in the Club-houses must be paid to the Proctor; all other fees must be paid at the Boone County National Bank, to the Treasurer of the University. *All fees and deposits must be paid in advance.*

Students who by reason of sickness enjoy the privileges of the Hospital will be charged a reasonable amount therefor.

Any student who does not pay promptly his dues of any sort to the University shall be liable to suspension or expulsion.

The student who has attained the highest rank in the graduating class of any "approved school" will be permitted to enter the Academic department of the University, or the College of Agriculture and Mechanic Arts (including Engineering and Architecture) without the payment of the entrance, library and incidental fee for the first year.

Students who fail to comply with the regulation requiring class-cards in the second semester to be filled, approved and filed with the Registrar by or before the first day of the semester, must pay a fee equal to one-half the fees for the session, unless specially excused. Excuses will not be granted except for grave reasons.

For statement of expenses in the School of Mines and Metallurgy (at Rolla, Missouri), see page 62.

The four Club-houses lodge 170 students, and can furnish meals at small cost to about 400. In the two large brick buildings situated on the Campus—dormitories numbered I and II, known as the University Board-

ing Club—room rent for each student is from \$12 to \$28 a year, according to the location of the room, and permits to dining room privileges are \$10 a year. These charges are payable on or before the first of September and include room rent, the attention of servants, heat, water, and the aid of a steward who supervises the housekeeping, the kitchen and the dining room. In order to secure a room in any Club-house, it is necessary to make a deposit of \$5, which will be credited on the room rent when paid. Any student who does not room in a Club-house may secure from the University Proctor a permit to take meals in the dining room upon payment of \$10 a year. Students who rent rooms or who take out meal permits for the regular session are required to make a deposit of \$5.00 each as security against damage to, or loss of, University property. Students in the Summer School who rent rooms in the University Boarding Club, are required to pay \$3 a term (six weeks), and in the Agricultural Club, \$2 a term. All such students must make a property deposit of \$3, returnable at the end of the term if no damage to property has been done by the student. The cost of room rent, board, lights and washing to those who enter a Club is about \$2 a week. Each room in the Agricultural Boarding Club, and in dormitory No. I of the University Boarding Club, is furnished with a double bedstead, a table and two chairs. Each room in dormitory No. II of the University Boarding Club is furnished with two single bedsteads, a table and two chairs. The occupants are expected to furnish whatever else they deem necessary. The buildings of the University Boarding Club are furnished with a good system of steam and hot air heating and ventilation and with closets and bath rooms of the best quality. The rooms are lighted with electric lights.

The members of the clubs have their own officers—president, commissary, secretary, censors, etc. They levy and collect assessments, buy their own provisions, and thus regulate their own expenses. The University Boarding Club is under the direction of a steward, and the Agricultural Boarding Club is under the direction of a matron, who supervise the preparation and serving of the food and the cleaning of the buildings.

In any club building, only two students will be allowed in one room, except by consent specially given by the Executive Board; and when three thus occupy one room, each of the three must pay full room rent.

Students in the Short Course in Agriculture and in the Spring Course for Teachers who may rent such rooms in any of the club-houses as are vacant at the time of their entrance shall pay therefor in the proportion which the length of their course of instruction bears to the entire session.

Except by consent of the Proctor, specially given, students that do not rent rooms in a club will not be permitted to take their meals

at the club table. When consent is given the student pays the Proctor of the University \$10.00 a year. The charges made by the University do not include an initiation fee of \$1.00 charged by the club. Students in the Short Courses in Agriculture and Horticulture and in the Spring Courses for Teachers pay for table board a permit of \$2 and an initiation fee of \$1.

On no account will table board in a club be given to any person not duly matriculated in the University, or to any person without a permit from the Proctor.

Each student renting a room in one of the club-houses, or taking out a permit to take meals, shall be required to make a deposit of \$5. This deposit will be refunded at the close of his connection with the club, provided he has paid all charges against him personally for damages to, or loss of, University property, and his proportionate part of the charges against the club for such damage or loss.

Students who rent rooms in any club or take out permits for meals, shall not have any part of the amount paid by them refunded, but such students may, with the consent of the Proctor, rereut their rooms or assign their permits.

Order in the clubs is maintained by monitors appointed by the Curators, who report any disorder to the Dormitory Board, consisting of the Proctor, the chairman of the Discipline Committee and the Dean of the Academic department.

As the accommodations of the club-houses are limited, it is necessary for students who wish to engage rooms to make early application for them; they are frequently all engaged before the opening of the college year. The rooms are assigned in the order of application, and requests for them must be made to the Proctor of the University, J. G. Babb.

DEGREES AND CERTIFICATES.

Degrees:

The following degrees are now conferred by the University:

In the Academic department, Bachelor of Arts (A. B.), Bachelor of Science (B. S.), Master of Arts (A. M.), Master of Science (M. S.), and Doctor of Philosophy (Ph. D.).

In the School of Agriculture, Bachelor of Science in Agriculture (B. S.), and Master of Science in Agriculture (M. S.).

In the Law department, Bachelor of Laws (LL. B.), and Master of Laws (LL. M.).

In the Medical department, Doctor of Medicine (M. D.).

In the School of Engineering, Bachelor of Science (B. S.) in Civil Engineering, in Electrical Engineering, in Mechanical Engineering, and in

Sanitary Engineering, respectively. The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), are also given for graduate work.

The degrees of B. S. in Mining Engineering, in Civil Engineering, and in Chemistry and Metallurgy, and the graduate degrees of Civil Engineer (C. E.), and Engineer of Mines (E. M.), are given in the School of Mines and Metallurgy, at Rolla. It gives also the degree of B. S. in an Academic Course in Science.

The Master's degree and the degree of Doctor of Philosophy (Ph. D.), are conferred upon the completion of sufficient graduate work. For particulars, see page 64.

Except that of Doctor of Laws (LL. D.), no degrees are conferred *honoris causa*.

For further information, see announcements of the respective Departments.

Certificates:

A certificate in Surveying, two in Pedagogy, one in the two years' course in Agriculture, one in the four-years' course in Mechanic Arts, and also one in Military Science and Tactics, are given.

Three certificates (in Assaying, Surveying, and Electricity respectively) are given at the School of Mines and Metallurgy, Rolla.

For further information see announcements of the various Departments.

COMMENCEMENT EXERCISES.

The Commencement Exercises occupy the four days ending with the first Wednesday in June of each year. For specific days, see Calendar, page 1H.

PRIZES.

Curator's Scholarships:

By order of the Board of Curators, the student who attains the highest rank in the graduating class of any approved school will be permitted to enter the Academic department of the University or the Agricultural and Mechanical College (including Engineering and Architecture) without the payment of the first year's entrance and library and incidental fee.

The following students were admitted during the session of 1899-1900 under this provision:

Frederick A. Boxley.....	Butler Academy, 1897
John Gore Cable....	Hannibal High School
Russell Edwards	Columbia Normal Academy
Ross Elmer Feaster.....	Windsor High School
Edwin Allen Fessenden.....	St. Louis Manual Training School
Jesse Hogan.....	Maryville High School
Julia Harvey	Moberly High School
William T. Nardin.....	Vandalla High School

Alvin NormanMound City High School
 Fannie Sinclair.....Columbia High School, 1898
 Ira StoneColumbia High School
 Maggie Lou StumpNevada High School
 Mattie Lute WrightChristian College
 Robert Ernest WhiteHarrisonville High School

The student attaining the highest grade, or who shall be first in merit, in taking the degree of A. B., B. S., or B. L., in the graduating class of any of the universities or colleges composing the Missouri College Union, will be admitted to the Law or the Medical department of the University for the first year without payment of any tuition, library or incidental fee. The Missouri College Union is now composed of Washington University, Westminster College, William Jewell College, Drury College, Central College, Missouri Valley College, and the University of the State of Missouri.

Under this provision the following students were admitted to the Law department: Charles E. Rendlin, A. B., of William Jewell College, and Henry S. Conrad, Ph. B., of Missouri Valley College.

Free scholarships in the Academic department are offered to such students from the "Masonic Home of Missouri," St. Louis, and the "Odd Fellows Home," Liberty, as may be prepared to enter the University.

Students who hold Fellowships (see page 51) are admitted to the University without the payment of entrance, library and incidental fees, or deposits in the laboratories in which they give instruction.

Stephens Medal:

Founded by the Hon. James L. Stephens, of Columbia, and annually awarded for the best oration by a member of the Senior class. The prize consists of a book in defense of the Christian religion, and a gold medal, for the purchase of which the annual interest on \$500 is available.

The Laws Astronomical Medal:

For conditions of award, see Index under "Astronomy."

Dachsel Prize:

Ten dollars in money, by the late Charles Dachsel, engineer, of Jefferson City, Mo., is awarded for the best thesis on the Steam Engine.

McAnally Medal:

For the best English essay. See Index under "English."

Rollins Scholarships:

See page 50.

Law Prize:

See announcement of Law department.

William J. Bryan Prize:

Established by the Board of Curators through a generous donation by the Hon. W. J. Bryan, of Lincoln, Nebraska. The prize consists of a medal for the purchase of which the annual income from \$350 is available, and is awarded for the best essay on some subject pertaining to the Science of Government. In 1900-1901 the William J. Bryan prize will be awarded for the best essay on "The Development of the Cabinet of the United States, and its Relation to the Executive and to Congress," under the following conditions:

1. Competition is open to all students of the University.
2. The essays submitted shall contain between 2,000 and 2,500 words.
3. They must be in the hands of the Registrar of the University not later than 12 o'clock noon, of the first Saturday in May.
4. Each essay shall be signed with a fictitious name and be accompanied with a sealed envelope containing the real name of the writer and bearing the fictitious name on the outside.

Declamation Prizes:

Particulars are given in the announcement of the work in Elocution.

Medals Offered by the Literary Societies:

The literary societies in the University offer medals to the winners in their inter-society contests in declamation, essay, oration, etc.

SOURCES OF AID TO STUDENTS.**1. The Rollins Aid Fund:**

Anthony W. Rollins, M. D., an honored citizen of Boone county, father of the Hon. Jas. S. Rollins, dying in 1845, left by his will the sum of \$10,000 in trust for the purpose of educating such indigent youths of Boone county, both male and female, as might be unable to educate themselves. Three-fourths of the annual interest on the fund, according to the directions of the donor, is to be devoted to the education of the youths of Boone county, and the remaining one-fourth is to be added to the interest-bearing principal. The fund amounts now to about \$40,000. The President of the University is required, at each annual Commencement, to invite the citizens who may be present to subscribe for the enlargement of this fund. The beneficiaries of this charity are annually selected by the President of the University from the indigent youths of Boone county,

male and female. In compliance with the wishes of the donor, the selection is made with reference to the moral as well as the intellectual qualities of the youths inclined to avail themselves of the advantages of the fund, preference being given, in the selection of boys, to such as evince an inclination to preach the gospel.

Applications for aid from the Rollins Aid fund must hereafter be in writing; a blank form will be furnished by the Proctor, with whom it must be filed after it has been filled. The applicant must appear in person at the opening of the first semester, September 11, as no reservation will be made. No application should be made or will be received, unless the applicant has passed the examinations for entrance and has been duly admitted to the University. Hereafter a part of the money given to each beneficiary may be paid at the opening of the first semester and a part at the opening of the second semester.

2. The James S. Rollins University Scholarships:

In 1889 the Hon. James S. Rollins left six thousand dollars (\$6,000) to endow six scholarships in the University—"the interest" on this \$6,000 "to be forever used and appropriated under the authority and by the direction of the Board of Curators of the University of the State of Missouri, for the following purposes, that is:

"To found scholarships to be awarded by the President and Faculty of the University—the vote in each case to be by ballot—as a reward for excellence and promise in—

"*First.* The College of Arts, for the degree of A. B., fifty dollars.

"*Second.* The College of Arts, for the degree of B. S., fifty dollars.

"*Third.* The College of Agriculture and Mechanic Arts, for the degree of B. Agr., fifty dollars.

"*Fourth.* The College of Law, for the degree of LL. B., fifty dollars.

"*Fifth.* The College of Medicine, for the degree of M. D., fifty dollars.

"*Sixth.* The College of Engineering, for the degree of C. E., fifty dollars.

"These scholarships are intended as a recognition of merit and character in the beneficiaries, and shall be payable on the first day of June of each year to that member of the *Junior class*, in each of the colleges designated, who shall be adjudged entitled to it by the President and Faculty; and the names of the persons receiving said scholarships shall be publicly announced on Commencement day by the President of the University.

"In according these scholarships, it is earnestly impressed upon the President and Faculty of the University, that in the mind of the donor, purely intellectual and literary ability are not alone to be considered, but that the moral character of the contestants should be regarded as a factor of no small weight in coming to a decision.

"With the earnest hope that by the means here provided, worthy young men and women may in all coming time be helped and encouraged in their struggle toward a higher life and a greater usefulness, this fund is committed to the honor and good faith of the State, whom the Board represents, and by whose authority the donation is made and accepted."

These scholarships were awarded in June, 1899:

The James S. Rollins Scholarship, Department of Medicine,
Clarence Martin Jackson.

The James S. Rollins Scholarship, Department of Law,
Gratia Evelyn Woodside.

The James S. Rollins Scholarship, College of Agriculture and Me-
chanic Arts (School of Agriculture),
Carrie Ruth Jackson.

The James S. Rollins Scholarship, College of Agriculture and Me-
chanic Arts (School of Engineering),
Urban Serenus Marshall.

The James S. Rollins Scholarship, Academic Department, A. B.,
Rosalie Gerlg.

The James S. Rollins Scholarship, Academic Department, B. S.,
Meta Therese Eltzen.

3. Cadetships:

Each Senator and Representative of the General Assembly of Mis-
souri may appoint a cadet and sometimes two cadets from his district.
For further information see report of the Department of Military Science
and Tactics.

4. Curators' Scholarships:

See page 47.

5. Fellowships:

Fellowships are annually established in any subject where such addi-
tional teaching force may be required. Students holding these are put
down in the list of the Faculty as Fellows. They are appointed by the
Board of Curators, are required to teach five or six hours a week, and
receive for this service \$200 with exemption from the payment of fees.
They are required to devote the remainder of the time to graduate work
approved by the Professor whom they assist and by the President of the
University. These Fellowships are conferred upon men and women who
are working for higher degrees, and except for extraordinary reasons, are
not conferred upon undergraduates. Candidates for the Master's degree
may not, except for extraordinary reasons, hold a Fellowship for longer
than one year, nor candidates for the Doctor's degree for longer than three

years. Students holding these Fellowships are not required to pay entrance, library, and incidental fees, or to make laboratory deposits in the laboratory in which they assist.

6. Club-houses:

See page 39.

7. Labor on Farm and Garden:

The sum of \$1,200 has been provided by the General Assembly for student labor on Farm and Garden during the present biennial period. Applicants should see the Dean of the College of Agriculture and Mechanic Arts.

MAKING ONE'S WAY AT THE UNIVERSITY.

There are many students now enrolled who are paying their way by their own exertions. Many of them save enough during the session and the summer vacation to pursue their work without interruption, while others drop their studies at the University for a year and engage in teaching and other occupations. Some of the ablest men in this and other States have paid their way by the labor of their hands. One of them is now representing Missouri in Congress; another was recently a Judge of the United States Court, while a third is the chief of one of the divisions of the U. S. Department of Agriculture.

The Y. M. C. A., a student organization, to its credit be it said, has appointed a committee to canvass the town for work and distribute it among students needing it. Too much praise can not be given for the encouragement which this body of Christian students and the teachers and officers of the University have given to poor young men in supporting themselves by their own labors.

COST OF ATTENDING THE UNIVERSITY.

The estimates of the cost of a year's attendance at the University given below were prepared by a student thoroughly familiar with the matter and are in every respect trustworthy. They are based upon actual experience. The first estimate is taken from students' note-books, but lest it be too low, about \$15.00 has been added to their figures:

I. LOW ESTIMATE.

	Acad., Agr., Engr.	Law.	Med.
Board, room, fuel, lights, at A. B. or U. B. Club	\$ 80 00	\$ 80 00	\$ 80 00
Books.....	10 00	85 00	25 00
Incidentals.....	12 00	12 00	12 00
Laundry	8 00	8 00	8 00
Total.....	\$110 00	\$135 00	\$125 00

II. CONSERVATIVE ESTIMATE.

	Acad., Agr., Engr.	Law.	Med.
Board, room, fuel, lights.....	\$120 00	\$120 00	\$120 00
Books.....	10 00	35 00	25 00
Incidentals	30 00	30 00	30 00
Laundry	12 00	12 00	12 00
Total..	\$172 00	\$197 00	\$187 00

III. LIBERAL ESTIMATE.

	Acad., Agr., Engr.	Law.	Med.
Board, room, fuel, lights.....	\$180 00	\$180 00	\$180 00
Books.....	15 00	40 00	80 00
Incidentals.....	45 00	45 00	45 00
Laundry	15 00	15 00	15 00
Total.... ..	\$255 00	\$280 00	\$270 00

These figures do not include tuition, and they apply to young men only. Young women could scarcely bring their expenses below the "Liberal Estimate" on account of the greater cost of board. With a good dormitory for the young women they would not be at such a disadvantage.

While the figures given under "Low Estimate" seem quite small, many students make them smaller still. It is safe to say that students can not enjoy anywhere such excellent advantages at such low cost as at the University.

The student who prepared these estimates, remarks: "One boy last year was fortunate enough to be enabled to do a full year's work, pay all expenses by his own efforts and go away in the spring with more money than he had upon entering."

PHYSICAL CULTURE.

Gymnasium:

The Thirty-eighth General Assembly appropriated the sum of \$7,500 for the equipment of a gymnasium, and \$1,200 for the improvement of the athletic grounds. Rooms in the new Academic Hall have been set aside for the gymnasium proper, and fitted with baths, lockers, etc. A fine equipment has been put in. There is a separate gymnasium, thoroughly equipped, for women.

Athletic Grounds:

In addition to the gymnasium there are athletic grounds, with base-ball and foot-ball fields. These are enclosed, a grand-stand has been erected, and tracks constructed for bicycling and running. These, with the tennis courts, provide ample means of exercise for every student in the University. In recognition of the generosity of members of the Rollins family toward the Athletic Association, the field has been named by the Curators "The Rollins Athletic Field."

Credit for Gymnasium Work:

A credit of one hour for three hours' gymnasium work per week for four semesters is given towards Academic degrees to those students having the subject entered on their class cards, who are regular in attendance and pass the tests submitted at the end of each semester.

Courses of Instruction:

Students electing regular gymnasium work are carried through a complete course of Light Gymnastics and as far into the more difficult exercises of Heavy Gymnastics as their individual abilities permit.

Reading and lecture courses are conducted by the Physical Director at the request of students.

Public Exercises:

In addition to the usual schedule of foot-ball and base-ball games there are gymnastic entertainments and contests, strength tests, basket-ball contests, tennis tournaments, boat races, and field days. Proficiency in these contests is rewarded by the privilege of wearing the University "M."

No student will be allowed to take a place on any University team or

to engage as a representative of the University in any Athletic contest unless in the last semester in which he attended the University preceding the Athletic contest he made passing grades (70) on at least seventy-five per cent of his studies.

STUDENTS' PERIODICALS.

The students maintain and manage two periodicals. These are the *Independent* (biweekly), and the *Savitar* (annual).

SOCIETIES.

1. Literary:

There are connected with the University at Columbia eleven literary societies for students—the "Graduate Club," the "Athenæan," the "Union Literary," the "Bliss Lyceum," the "Medical Society," the "Agricultural Society," the "Engineers' Society," the "Missouri State University Debating Club," the "New Era Debating Club," the "Twentieth Century Debating Club," and the "University Club Court." These societies hold weekly meetings for improvement in debate, declamation, oratory and composition, and form an important means of culture, especially in speaking and writing.

For societies at the School of Mines, see page 62.

2. Young Men's Christian Association:

The object of this organization, which dates its existence in the University from January 18, 1890, is the same as in other institutions of learning: namely, to represent and in every way to promote practical Christianity, particularly among the students. The work has been rich in good results.

Devotional exercises are held every morning at 8 o'clock and also every Sunday afternoon. Classes hold weekly meetings for the study of the Bible and special religious services are held from time to time.

A movement has been set on foot to erect a building to cost at least \$40,000, for the Young Men's and Young Women's Christian Associations. For this purpose the former has already pledged the sum of \$6,500, and any encouragement from sympathetic friends will be gratefully acknowledged. It is intended that the building shall be complete in all the appointments necessary for the work of the Association.

A lot immediately in front of the University Campus has been purchased for the site of this building at a cost of \$2,650, of which all but about \$200 has been paid.

The Association is at present using the old building which stood on the lot when purchased, having fitted up a reading-room and a room for games

for the benefit of the Association and its student friends. On the rear of the lot a tennis court has been built which is one of the advantages offered by the Association.

At the beginning of each scholastic year a committee from the Y. M. C. A., to be recognized by their badges, meet students at the trains and freely render them valuable assistance by securing board, by introducing them to friends and to officers of the University, and by various acts of kindness. A letter sent in advance to the president of the Young Men's Christian Association will receive prompt and cheerful attention.

A committee was appointed last summer to canvass the town for work for students making their own way. As a result of the efforts of this committee, work amounting to over \$2,000 was found and distributed among students needing it.

The General Secretary, employed by the Association, has his office at the Association building, and is ever ready to render any aid to students that may be in his power.

The Association also offers, annually, to the public, particularly to the students, at actual cost, a series of literary and musical entertainments of a high order of excellence.

During the last session the following lectures and concerts were thus given: Rev. Thos. Dixon, Jr., "Backbone;" "The Ottumwa Male Quartette;" Dr. P. S. Henson, "Grumblers;" "The Western Stars;" Geo. R. Wendling.

3. Young Women's Christian Association:

The Association, which is similar in its aims and methods to the foregoing, was organized April 2, 1891. Its object is the advancement of Christian work and the development of Christian character, particularly among the young women of the University. Its weekly meetings are held at 4 p. m. every Sunday, one of them every month being a union meeting in conjunction with the Y. M. C. A.

Both of these Associations have enjoyed the hearty encouragement of all the authorities of the University.

4. Musical:

The University Choral Union was organized in the autumn of 1898 for the study of chorus work. It has a large, active membership, including many townspeople as well as students from all Departments. Weekly meetings are held in one of the rooms of Academic Hall. A Music Festival consisting of two concerts, afternoon and evening, is given annually in May. The organization affords students an opportunity for musical training at the nominal cost of fifty cents for initiation and the price of the music.

The students maintain a Military Band and also a String Band.

5. Alumni:

The Alumni Association is composed of all the graduates of the University. It holds an annual meeting on Tuesday of Commencement week, and is addressed in the University chapel by an orator previously selected from its own body.

The objects of this Society are the promotion of education, especially in the halls of the Alma Mater, the reunion of early friends and co-laborers in literary pursuits, and the revival of those pleasing associations which entwine themselves about university life.

The initiation fee for membership is \$1. This is the only charge imposed upon members, as the Association possesses an endowment of \$8,000, the income of which is used in defraying expenses of the annual meeting, etc. An initiation fee addressed to S. F. Conley, Secretary, Columbia, Missouri, will lead to prompt enrollment.

The officers of the Association are: North T. Gentry, President, Class '88, Columbia; E. C. White, First Vice-President, Class '56, Kansas City; Levi Chubbuck, Second Vice-President, Class '82, St. Louis; S. F. Conley, Secretary, Class '90, Columbia; J. S. Alexander, Treasurer, Class '85, Columbia.

In June, 1898, the University published an alphabetical list of its graduates with their addresses. Graduates are requested to furnish the University Registrar, Irvin Switzler, with information pertaining to such compilation.

A movement for a stronger organization of the Alumni has been inaugurated. The Alumni constitute, in fact, one of the largest elements in the life of the University, and, sufficiently organized, may become the most powerful agent in her development and prosperity. No effort should be omitted, both to strengthen the central organization at Columbia and to extend its branches throughout the State. For number of Alumni, see Index, under "Alumni."

LOCAL CHAPTERS OF THE ALUMNI ASSOCIATION.***Baton Rouge, La.:***

C. H. Stumberg, President.
W. R. Dodson, Secretary.

Chillicothe:

Scott J. Miller, President.
Katherine M. Leaver, Secretary.

Columbia:

Dr. M. D. Lewis, President.
R. H. Emberson, Secretary.

Macon City:

R. W. Barrow, President.
Dr. R. Gillaspie, Secretary.

Marshall:

Judge James Cooney, President.
———, Secretary.

Moberly:

Judge B. S. Head, President.
F. G. Ferris, Secretary.

Christian Guide.
 Christian Observer.
 Central Baptist.
 Western Christian Union.
 Western Watchman.
 Church Progress.
 The Christian Science Journal.
 The Christian Science Sentinel.
 Advocate of Peace.
 Herald of Golden Age.
 Food and Home.
 K. C. Live Stock Indicator.
 Kansas City Packer.

Medical Mirror.
 Journal of Am. Med. Ass'n.
 Modern Medicine.
 Virginia Medical Semi-Monthly.
 Red Cross Notes.
 Pediatrics.
 School and Fireside.
 Industrialist.
 Western College Magazine.
 School and Home Education.
 The Church News.
 The Hesperian.

To the Law Library:

	Vols.
State of Missouri	1,057

To Medical Department:

Frazier-Tibbet Co., 100 samples of medicine.

To Mechanical Engineering:

	Vols.		Vols.
Society of Mech. Engineers...	1	Navy Department	1

To Germanic Languages:

	Vols.		Vols.
R. Weeks	4	B. F. Hoffman	4

To Horticulture:

U. S. Department of Agriculture, collection of seeds and plants.
 Hillis Bros., insect exterminator.

To Romance Languages:

	Vols.
The actors in the French play.....	35
Mr. J. A. Hammack.....	2
Miss Schoenl, one bound MSS.	
R. Weeks, one subscription to <i>Journal des Debats</i> .	
Mr. Pope Jordan.....	2
Mr. John L. Gerig, 3 pamphlets and.....	25
Mr. Hawkins.....	2
Wm. R. Jenkins, of New York.....	18
Various friends	24
Various friends, ten framed portraits of celebrated authors.	

To Botany:

U. S. Department of Agriculture (B. T. Galloway), 500 specimens of Parasitic Fungi.
 U. S. Department of Agriculture (F. Lamson Scribner) 230 specimens of grasses.

B. THE SCHOOL OF MINES AND METALLURGY, AT ROLLA.**Buildings and Equipment:**

Main Building.—The buildings of the School of Mines are situated in the most elevated part of the town of Rolla. They are substantial brick structures, well ventilated and lighted. The Main building and the Mining laboratory are heated by steam. The Main building contains the assembly room, the library, lecture rooms for the Professors of Engineering, Mathematics, Physics, and for Academic work, the Physical laboratory, offices of Executive Committee and Director, etc. For the work in Engineering there is ample provision of field instruments, and a beginning has been made in the acquisition of testing apparatus.

Physical Laboratory.—The Physical laboratory has recently received several thousand dollars' worth of apparatus, and its equipment is being augmented from time to time. It is especially strong on the side of electricity, and comprises two dynamos, with which a small electric lighting plant is maintained.

Chemical Laboratory.—The Chemical laboratory is housed in a separate building, admirably adapted to its occupancy. This contains a lecture room, qualitative laboratory, quantitative laboratory, Professors' laboratory, assay laboratory, weighing room, evaporating room, preparation room, supply room, and basement. Facilities for heat, light and ventilation, and for carrying off foul or noxious gases, are excellent. Gas and water are supplied to each table. The assay laboratory, which is on the first floor, is amply provided with the proper furnaces, ore-crusher, pulverizing plate, balances, etc., and throughout the whole building the arrangement and equipment are such as to leave little to be desired.

Mining and Metallurgical Laboratory.—The Mining and Metallurgical laboratory, for which the 37th Assembly made an appropriation of \$25,000, is now completed. In addition to provision for instruction, both by lectures and by laboratory methods, in Mineralogy and in Geology, there is a special laboratory fitted with full-sized working machinery and the needed furnaces for practical illustration of the processes of ore-dressing and of metallurgy.

In the second story is a drawing room of about 600 square feet of floor space, lighted from the top by sky-lights.

Library.—The library contains about 8,500 volumes. It is well provided with scientific and technical works designed to afford the student an opportunity of supplementing his class-work by collateral reading. There is also a respectable collection of works of general literature. On its reading-tables the leading scientific periodicals and others of general or literary interest are accessible. The library is open daily from 8 a. m. to 4 p. m.

Club-House.—The students' club-house or dormitory is a handsome three-story building, erected in 1890, and contains room enough for twenty-five or thirty lodgers. The dining-room and kitchen can supply board for sixty. No charge is made for room rent, but each occupant of a room is required to make a deposit of \$5 to pay for any damages for which he may be responsible—the unconsumed portion of this fund being returned to him at the end of the session. The cost of board, including lights and heat, is at present \$13 a month. Anyone who may wish to engage a room should make an early application, accompanying it with the five dollar deposit.

Expenses:

The entrance, incidental, and library fee for the year is \$5. Students in the Chemical laboratory pay for material consumed and apparatus broken, to provide for which emergencies a deposit of \$10 is made at the beginning of the year, the sum being increased to \$15 for those taking a "special" or "assay" course. The unused portion of this deposit is returned at the end of the year.

Board, fuel, lights, and washing, can be had for from \$12 to \$16 a month. The necessary expenses range from \$140 to \$200 a year.

Athletics:

Through the liberality of the Curators an athletic field has been inclosed and graded for the benefit of the students. It furnishes ample space for base-ball, foot-ball and lawn tennis. An athletic association exists among the students.

Students' Societies:

A society composed of both students and professors meets fortnightly to discuss topics of contemporary interest, scientific, literary and historical. The advanced students in the Chemical laboratory conduct a "Journal Club."

Examinations:

During the last week of each term all students are required to stand written examinations on the studies pursued, and the results of these examinations, with the average monthly grades, determine their term grades. A student, to pass, must attain at least 75 per cent.

Monthly Reports:

Regular monthly reports are sent to the parents or guardians of each student, showing the student's grade in scholarship for the month, and giving such other information in regard to his progress, attendance, etc., as may be thought to be of interest. The attention of parents and guardians is particularly called to these reports.

For fuller information, the special catalogue issued by the School will be sent upon application to the Director, Prof. George E. Ladd, Rolla, Missouri.

DEPARTMENTS OF THE UNIVERSITY.

The University comprises the following Departments:

- I—Graduate Department.
 - II—Academic Department.
 - III—Department of Education.
 - IV—Department of Law.
 - V—Department of Medicine.
 - VI—Department of Military Science and Tactics.
 - VII—College of Agriculture and Mechanic Arts, embracing
 - A. *School of Agriculture.*
 - B. *Experiment Station.*
 - C. *School of Mechanic Arts.*
 - D. *School of Engineering.*
 - E. *School of Architecture.*
 - VIII—School of Mines and Metallurgy (at Rolla).
- [These Departments, II to VIII, are established and made co-ordinate by the statutes of Missouri.]
-

I. Graduate Department.

FACULTY.

The Faculty consists of the President, the Professors, and the Assistant Professors of all Departments.

I. ACADEMIC.

Admission:

Graduates of either sex of the Colleges and Universities comprising the Missouri College Union and of other reputable Colleges and Universities, and (in exceptional cases, by special permission of the Faculty) other persons of liberal education, are admitted to such graduate work as they are prepared for. The credentials of candidates for admission to this Department will be passed upon by the Dean.

Fellowships:

Fellowships are annually established where such additional teaching force is required. Holders of these fellowships are required to teach five or six hours a week, and receive therefor \$200; and they are exempt from the payment of fees and deposits. For further details, see page 51.

During the year 1899-1900, fellowships were held in Germanic Languages, Romance Languages, Biology, Mathematics and Physiology.

Graduate Club:

A club has been organized by the graduate students for the purpose of furthering their social and scholastic interests in the University and of bringing themselves into touch with graduate student life elsewhere. This club has joined the Federation of Graduate Clubs of the leading American Universities, and the courses here offered are announced in the handbook published by the Federation.

Degrees:

1. *The Master's Degree.*—Application for the Master's Degree in Arts or Science will be considered on the basis of one year's graduate study in the University. This year's study is understood to mean for Fellows at least eight (8) hours a week, for other students at least ten (10) hours a week, throughout the scholastic year, or the full equivalent of such study. All courses may be taken from one general subject; at least half must be. The majority of the courses must be from those offered for graduate students. Only advanced undergraduate electives shall be counted for this degree.

A creditable thesis evincing capacity for original research and power of independent thought, in the line of the student's previous work, shall be submitted on or before May 1 of the given year.

The subject of the thesis and the courses chosen shall be laid before the Committee on Graduate Degrees on or before November 1 of each year.

At the close of the scholastic year the University Council may, on the report of this Committee, recommend to the Board of Curators for this degree such candidates as have satisfactorily fulfilled these conditions.

2. *Master's Degree and Life Certificate.*—Candidates for the Master's Degree who wish the Life Certificate to teach in Missouri may obtain this in the following manner: In each semester they shall elect Senior Pedagogy, 8 hours a week, as a portion of the ten hours a week required for the Master's Degree. The remaining 7 hours required for this degree must be of a strictly graduate character. The candidate shall, in addition, elect Junior Pedagogy, 3 hours a week for both semesters. On the satisfactory completion of these 18 hours a week for each semester the candidate may receive the Master's Degree and the Life Certificate.

3. *The Doctor's Degree.*—The candidate will be expected to spend at least three years, or, if he have a Master's Degree, at least two years, in graduate study under University direction; but with the consent of the Faculty, one of these years may in either case be spent *in absentia*.

The candidate must have a Bachelor's Degree in Arts, Letters, Science, or Philosophy, from some reputable University or College, and must attain in graduate study at this University a high proficiency in one branch of learning, and a respectable proficiency in at least one other. He must submit a dissertation embodying the results of original investigation, and must pass examinations in his major and minor subjects.

Candidates who have satisfactorily met these conditions may be recommended for the Doctor's Degree in the manner prescribed above for candidates for the Master's Degree.

*COURSES OF INSTRUCTION.

CHEMISTRY.

Professor Brown :

1. History of Chemistry and Chemical Philosophy.
2. Quantitative Analysis (advanced).
3. Organic Chemistry (advanced).
4. Physical Chemistry.

CLASSICAL ARCHAEOLOGY.

Professor Pickard :

1. Topography and Monuments of Athens. *Two hours a week.* Jahn's "Pausaniæ Descriptio Arcis Athenarum," and Schubart's text of Pausanias will be studied and interpreted in the light of most recent excavations and publications. The disputed points of Athenian topography will be discussed and the attempt will be made, with the aid of plans and photographs, to obtain as clear ideas as possible of both ancient and modern Athens.

2. Archaeological Seminary. *Two hours a week.* A study of the description, explanation, and interpretation of works of Greek Art will be made. Both sculpture and vase paintings will be discussed and important points in the history of Greek Art and Greek artists will be considered.

ENGLISH.

Professors Allen, Penn and Belden :

1. Studies in Anglo-Saxon, based on Beowulf and the Wuelker-Grein Bibliothek. *Three times a week.*

*Other courses of study offered among the Academic studies (pages 78-98) are accepted as graduate in rank. For details, see announcement of Academic Courses.

2. Gothic. An introduction to Germanic Philology, with special reference to English. *Three times a week.*

3. Tennyson and Browning. A course in the criticism and appreciation of modern English poetry. *Twice a week.*

GEOLGY.

Professor Marbut:

1. Geomorphology. Special study of land form—Lectures, library, laboratory and field work. *Three times a week.*

2. Investigator's Course. The mapping and correlation of the small detached areas of coal measure deposits in the vicinity of Columbia.

GERMANIC LANGUAGES.

Professor Hoffman:

1. Middle High German is offered in the first semester. Grammar: reading from Wolfram von Eschenbach: "Gamuhret und Herzelolde," "Parzivals Jugend und Eintritt in's Leben"—translation into good modern High German, noting changes in construction, phraseology, and meaning of words; with lectures on the literature of the period. *Three hours a week.*

1a. Historical German Grammar. *Twice a week.*

2. German Literature of the Eighteenth and Nineteenth Centuries. This course continues through the first and second semesters. *Three hours a week.*

3. Course in Old High German is offered in the second semester: Braune's Grammatik and Lesebuch; reading various fragments, and a portion from Tatian, Otfrid, Notker, and Williram's Lied; philological study in connection with it. *Three hours a week.*

NOTE.—Either course 1, or 1a, in the first semester can be given, not both.

GREEK.

Acting Professor Kyle:

1. Historical Grammar. *Two hours a week.*

2. Seminary for advanced study. The work for the session of 1900-1901 will be in Euripides.

ECONOMICS.

Professor Hicks:

Seminarium in Economics and Finance. *Two hours a week.*

LATIN.

Professor Jones:

1. History of the Latin Language. *Twice a week both semesters.* This course embraces a historical study of the sounds, inflections and

syntax of Latin. It is taught wholly by lectures, but requires much collateral reading.

2. **Seminary.** The critical study of a selected author. For the session 1900-1901, Terence has been chosen.

MATHEMATICS.

Professor Fellows; Assistant Professor Defoe.

11. Trigonometric Series, Spherical Harmonics, Potential Function.
12. Theory of Functions (introductory course).
13. Theory of Functions (second course).

Courses 12 and 13 are usually given in alternate years.

PHILOSOPHY.

Professor Thilly:

Modern Criticism. A study of the development of the critical problem in modern philosophy from the side of empiricism. Especial attention will be given to Locke's *Essay Concerning Human Understanding*, Berkeley's *Principles of Human Knowledge*, Hume's *Treatise on Human Nature*, and Kant's *Critique of Pure Reason*. This course is open only to such students as have completed courses in Psychology, Logic, Ethics, and the History of Philosophy, and possess a good reading knowledge of Latin, French and German. *Three times a week for two semesters.*

Professor _____:

Seminary for Psychology and Advanced Laboratory work. *Three times a week for two semesters.*

PHYSICS.

Professor Lipscomb.

Laboratory. Advanced Measurements and Special Investigations. Open only to those who have had Undergraduate Courses 4, 7a, 7b, 8a and 8b, or an equivalent amount of work. *Three to five times a week.* See announcement of Academic department, under Physics.

ROMANCE LANGUAGES.

Professor Weeks:

1. **Old French.** Paris and Langlois' *Chrestomathie*, with lectures. *M. W. F., at 10:30.* This course is open to Graduates properly qualified, and to any Senior who has made a specialty of Romance Languages to the extent of having completed with high credit Undergraduate Courses 1, 2, 3 and 4 (see Academic department, "Romance Languages"). The epic poem, *Ajol*, will be read, with close attention to the elements that enter into the poem, the object being to present to the student a practical illustration of text criticism. The course is conducted entirely in French.

2. **Phonetics.** A general introduction to Philology. *First semester, M. W. F., at 2.* This course is one of general interest to students of Philology. The work consists of two parts: historical and practical. The practical work includes an effort to get at the production of speech-sounds from the physiological standpoint. Such works as Grandgent's *English and German Sounds* (Ginn & Co.) are used. Numerous tracings showing the actions of the organs of speech are discussed. The University has established a Laboratory of Experimental Phonetics for the more accurate study of the living speech.

3. **Seminar.** *Two hours per week.* Opportunity will here be given for advanced work in various subjects which may seem desirable.

ZOOLOGY.

Professor Lefevre:

1. **Neurology.** A course in the study of the central nervous system and terminal sense-organs of vertebrates, open only to such students as have completed undergraduate courses in the Comparative Anatomy and Histology of Vertebrates. *Second semester, three times a week.* Lecture, M., at 8:30; Laboratory, W. F., at 8:30.

2. **Cytology.** A study of the cell, with special reference to development and inheritance. Training is also given in the use of finer methods of technique in cytological research. *First semester, three times a week.* Lecture M., at 8:30; Laboratory, W. F., at 8:30.

3. **The Principles of Zoology.** A course of lectures, with collateral reading, designed to cover the main principles underlying zoological science. *First semester, three times a week, W. F., at 1:30.*

4. **Investigation.** A course of special research into unsolved problems of Zoology. The student is trained in the exercise of original observation and thought. Subjects assigned for investigation during the year 1900-1901 will be in Cytology and Experimental Morphology. *Throughout the year.* Hours will be arranged in accordance with the requirements of individual students.

5. **Zoological Seminary.** Weekly meetings throughout the year, at which current topics of zoological investigation are reported and discussed by instructors and students.

II. COLLEGE OF AGRICULTURE AND MECHANIC ARTS.

SCHOOL OF AGRICULTURE.

Candidates for the degree of Master of Science in Agriculture are required to do one year's graduate work at the University. This work must

consist of at least 10 hours a week throughout the year and the subjects selected must be advanced courses, and must be approved by the Dean and the Committee on Graduate Degrees.

SCHOOL OF ENGINEERING.

Graduate work in Civil, Electrical, and Mechanical Engineering is offered at Columbia to those who have finished the undergraduate courses in these subjects respectively with the degree of Bachelor of Science. Students that entering under these conditions have completed a year of graduate work and passed satisfactory examinations thereon, and presented a thesis of real merit, will receive, according to the course in which they have studied, the degree of Civil Engineer (C. E.), Electrical Engineer (E. E.), or Mechanical Engineering (M. E.). Graduate work in Hydraulic Engineering is offered to those who have completed the work in Civil and Mechanical Engineering.

The thesis subject shall be presented to the Committee on Graduate Degrees on or before Nov. 1, and the thesis shall be presented to the same Committee on or before May 1, of the given year.

See announcement of this School.

III. LAW.

One year of advanced work leading to the degree of LL. M.

The course is open to graduates of the Law department and of other law schools who have completed an equivalent course of study.

The object of this course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures, recitations and independent investigation on the following subjects:

Constitutional Law, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students such instruction.

The text-books recommended for the Graduate course are as follows :

Cooley on Constitutional Limitations ; Lewin on Trusts ; May on Insurance ; Walker on Patents ; Bishop on Criminal Law ; Thompson on Corporations ; Holland and Pollock on Theory of Jurisprudence ; Pattison's Forms.

A thesis subject shall be selected and presented to the Committee on Graduate Degrees on or before Nov. 1. The Thesis shall be submitted to the same Committee on or before May 1, of the given year.

See announcement of the Law department.

II. Academic Department.

FAULTY.

RICHARD HENRY JESSE, LL. D.,
President, and Professor of Ancient and Mediaeval History.

JOHN CARLETON JONES, A. M., Ph. D.,
Professor of Latin Language and Literature.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

GARLAND CARR BROADHEAD, M. S.,
Emeritus Professor of Geology and Mineralogy.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

* WILLIAM GWATHMEY MANLY, A. M.,
Professor of Greek Language and Literature.

Professor of Astronomy, and Director of the Observatory.

† JOHN WALDO CONNORWAY, M. D. C., M. D.,
Professor of Physiology (Human and Comparative).

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of Economics.

JOHN PICKARD, A. M., Ph. D.,
*Professor of Classical Archaeology, Assistant Professor of Greek,
Curator of the Museum of Classical Archaeology, and Dean of
the Department.*

FRANK THILLY, B. A., Ph. D.,
Professor of Philosophy.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

‡ ISIDOR LOEB, M. S., LL. B.,
Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

* Absent during session of 1900-1901.

† Absent during session of 1899-1900.

‡ For the session of 1899-1900.

HENRY MARVIN BELDEN, B. A., Ph. D.,

Assistant Professor of English Language and Literature.

RAYMOND WEEKS, A. M. Ph. D.,

Professor of Romance Languages.

WILLIAM GEORGE BROWN, B. S., Ph. D.,

Professor of Chemistry.

JOHN RUTLEDGE SCOTT, A. M.,

Professor of Elocution.

†CURTIS FLETCHER MARBUT, B. S., A. M.,

Professor of Geology and Mineralogy, and Curator of the Geological Museum.

JOHN NELSON FELLOWS, A. M.,

Professor of Mathematics.

GEORGE LEFEVRE, A. B., Ph. D.,

Professor of Zoology, and Curator of the Zoological Museum.

EUGENE MORROW VIOLETTE, A. B., A. M.,

Acting Assistant Professor of History.

ARTHUR GRAY LEONARD, A. B., A. M., Ph. D.,

Acting Assistant Professor of Geology and Mineralogy and Acting Curator of the Geological Museum.

†EVA JOHNSTON, A. M.,

Assistant Professor of Latin.

CHARLES BERRY NEWCOMER, A. B., A. M., Ph. D.,

Acting Assistant Professor of Latin.

JAMES WILLIAM KYLE, A. M.,

Acting Professor of Greek.

WILLIAM WALTER GRIFFITH, B. S.,

Instructor in Physics.

CHARLES THOM, A. B., A. M., Ph. D.,

Instructor (in charge) in Botany.

RICHARD B. MOORE, B. S.,

Instructor in Chemistry.

†Absent during session of 1899-1900.

ACADEMIC STUDIES.

Elective System:

Beginning with the session of 1900-1901, all work in the Academic department is made elective. That is, the student makes such choice and combination of the studies offered in this Department as he desires, subject to certain restrictions explained below. Election is made for the

entire session, except in the case of studies which are offered for only one semester. Those who elect such studies in the first semester must make a new election at the beginning of the second semester.

At the opening of the session each student makes out, on a blank form provided for the purpose, a list of the studies he wishes to pursue and deposits it with the Registrar. The list is then examined by a committee of the Faculty and if approved becomes the student's plan of work for the session (or for the semester—see preceding paragraph). If the plan presented is not in accordance with the regulations the student is notified of the fact by the Registrar and required to present another plan.

The student may not take more than 16 nor less than 12 hours a week. But students who are candidates for the Life Certificate may take 3 hours of Industrial work in any year in addition to 15 hours of Academic work. This Industrial work does not count toward an Academic degree.

When a student has elected a course that runs through both semesters he must abide by his election unless he fails in the work the first semester or can secure the permission of the Faculty to abandon it or to make substitution at the end of the first semester.

Each Professor determines the special requirements for admission to the different courses offered by him or his assistants. These requirements are for the most part stated in the detailed explanation of the courses, pp. 78-98. The student is advised to consult each Professor under whom he wishes to take work before making his election.

Degrees:

Two degrees are conferred, that of Bachelor of Arts, and that of Bachelor of Science. The following are the necessary qualifications for the attainment of these degrees:

For the degree of A. B.

1. The candidate must have met the entrance requirements of Group I, or of Group II (see Requirements for Admission, pp. 20-22.)

2. He must have completed at least twelve (12) hours in each of four subjects, and at least twenty-four (24) hours in a fifth subject, the subjects to be chosen from the following group:

1 Archaeology; 2 Astronomy; 3 Biology; 4 Chemistry; 5 Economics; 6 Elocution; 7 English; 8 Germanic Languages; 9 Geology; 10 Greek; 11 History; 12 Latin; 13 Mathematics; 14 Philosophy; 15 Physics; 16 Physiology; 17 Romance Languages; 18 Pedagogy; 19 Sociology.

3. He must have completed at least one hundred and twenty (120) hours in all.

For the degree of B. S.

1. The candidate must have met the entrance requirements of Group III (see Requirements for Admission, p. 22).

2. He must have completed at least twelve (12) hours in each of four subjects, and at least twenty-four (24) hours in a fifth subject. For subjects, see under 2 above.

3. He must have completed at least one hundred and twenty (120) hours in all.

By "hour" is meant one hour a week for one semester.

Besides the Academic Studies, and all the work offered in Pedagogy, the following courses in other Departments are open as electives to Academic students, and the candidate may present them (to an amount not exceeding nine (9) hours in all) as a part of the one hundred and twenty (120) hours required for graduation:

From the School of Agriculture: Entomology, for not more than six hours.

From the Medical Department: Anatomy from the First Year, or Physiology from the Second Year, or Hygiene (see announcement in Medical department) from the Third Year, for not more than nine hours.

From the School of Engineering: Thermodynamics, for not more than three hours; Descriptive Geometry, Electrical Measurements, each for not more than three hours; Applied Mechanics, for not more than six hours; Astronomy, for not more than three hours; and Mathematical Theory of Stresses, for not more than three hours.

Academic students may elect Physical Culture three hours a week for four semesters, and receive a credit toward the Academic degree of one hour for each semester.

The candidate may also offer, as part of the one hundred and twenty (120) hours, work done in the Summer School to an amount not exceeding the equivalent of twelve (12) hours for any one summer (see Appendix).

COURSES OPEN TO FRESHMEN.

English, courses 1, 3. Other courses if the student is prepared to take them.

Latin, courses 1, 2.

Greek, courses 1, 2, 3, 4, 5, according to preparation.

Archaeology, course 10; also courses, 1, 6, 8, if the student has had sufficient preparation.

French, course 1.

German, courses 1, 2, 3, according to preparation.

History, course 1.

Philosophy, courses 1, 2, 6.

Mathematics courses 1, 2; also 4 if the student has had Trigonometry.

Physics, course 1; also courses 2, 3, if the students have had Plane Trigonometry.

Chemistry, course 1.

Geology, courses 1, 3, 4.

Zoology, course 1.

Botany, courses 1, 2.

Elocution, courses 1, 2.

Hours of the Various Courses.

MONDAY, WEDNESDAY, FRIDAY.

	8:30	9:30	10:30	11:30	1:30	2:00	3:00	4:00	5:00
English.....	1,13	14b 5, 6, 14a	8, 9	10a, 12 1, 2b	.....	.....	16, 7	.....	.....
Latin	1,10	1, 2,	5	3, 4	.....	.....	.....	.....	.....
Greek.. ..	1	3, 4,	2, 11	.....	.....	9	.....	.....	.....
Archaeology. ....	.....	4	.....	.....	.....	2, 3, 9	.....	10	.....
Rom. Languages...	1	2, 4	1, 3, 7	10	.....	11	.....	.....	.....
Germ. Languages..	1	2, 4,	1, 2	8a, 8b	.....	.....	6	.....	.....
History.....	.....	.....	.....	3	.....	.....	5	.....	.....
Economics.....	.....	.....	.....	.....	.....	3	1	.....	.....
Philosophy	6	5	1	.....	.....	7	4	.....	.....
Mathematics... ..	7a, 7b	2, 6	11	1, 8	.....	.....	13	9	.....
*Physics .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Chemistry.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Geology.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Zoology .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Physiology.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Botany.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elocution.....	.....	.....	1, 2	.....	.....	1, 2	4	.....	.....
Pedagogy.....	.....	.....	1a, 1b	.....	.....	.....	.....	.....	.....

*For hours of courses not given in this table, see the Professor in charge of the subject.

Hours of the Various Courses.

TUESDAY, THURSDAY, SATURDAY.

	8:30	9:30	10:30	11:30	1:30	2:00	3:00	4:00	5:00
English.....	1,	3	4, 3	11	.....	.....	15	.....	.....
Latin.....	6, 9	1, 2	.....	3, 4, 8	.....	.....	7	.....	.....
Greek.....	6, 8	5	7	12	.....	.....	10	.....	.....
Archaeology.....	5	6	.....	.....	.....	1	.....	8	.....
Rom. Languages...	1	1, 5	6, 9	8	.....	.....	.....	.....	.....
Germ. Languages..	1	5	3	.....	.....	7	9a	.....	.....
History.....	2	.....	1	4	.....	.....	.....	.....	.....
Economics.....	.....	.....	.....	.....	.....	4	2	.....	.....
Philosophy	8	3	9	10, 11	.....	2	12	.....	.....
Mathematics	3, 10	4, 5	2	1	.....	.....	.....	12	.....
*Physics.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Chemistry .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Geology.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Zoology .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Physiology.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Botany.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elocution.....	.....	1, 2	3	1, 2	.....	.....	.....	.....	.....
Pedagogy.....	.....	.....	.....	.....	.....	.....	2	.....	.....

*For hours of courses not given in this table, see the Professor in charge of the subject.

ACADEMIC COURSES IN DETAIL.

English.

Professor ALLEN; Assistant Professor PENN; Assistant Professor BELDEN.

1. English Composition and Rhetoric. Detailed study and practice in Construction and the Kinds of Composition. Lectures, exercises, and themes. Penn's Outline and Exercises, and A. S. Hill's Principles of Rhetoric. Class-room study of literature illustrative of the different kinds of Composition. Section I, *T. Th. S.*, at 8:30; Sections II and III, *M. W. F.*, at 8:30; Section IV, *M. W. F.*, at 11:30. Assistant Professors PENN and BELDEN.
(Recommended for the first year.)
- 2b. Higher Composition, expository and argumentative. *Second semester*, *M. W. F.*, at 11:30. Assistant Professor BELDEN.
(Must be preceded by 1. or its equivalent.)
3. English Literature. General View. *First semester*, Chaucer to Shakspeare; *Second semester*, Milton to the present. Section I, *T. Th. S.*, at 9:30; Section II, at 10:30. Professor ALLEN and Assistant Professor BELDEN.
(Recommended as preliminary to other courses in Literature.)
4. English Literature. Nineteenth Century. *First semester*, The Romantic Revival (1789-1830). *Second semester*: The Scientific Movement and its influence (1830-1890.) Lectures. Class-room study of texts, parallel readings, and occasional essays. *T. Th. S.*, at 10:30. Assistant Professor PENN.
Either semester may be taken alone.
5. English Literature. Eighteenth Century. *First semester*, Dryden and Pope; *Second semester*, Swift and the Novellists. *W. F.*, at 9:30. Assistant Professor BELDEN.
(Must be preceded by 3 or its equivalent.)
6. Humanism. A study of the influence of the Revival of Learning upon English Literature, from Spenser to Pope. *W. F.*, at 9:30. Assistant Professor BELDEN.
(Must be preceded by 3 or its equivalent.)
7. English Literature. Shakspeare. Eight to ten selected plays: class-room reading and interpretation; detailed study of style. *M. W. F.*, at 3. Assistant Professor PENN.
(Must be preceded by 3 or its equivalent.)
8. English Literature. The English Drama. *First semester*: Chief Plays of Shakspeare, in approximate chronological order. A study of the development of Shakspeare's art and genius. *Second semester*: The English Drama (exclusive of Shakspeare) from its beginnings to the Restoration (1250-1660). Lectures. Selected plays, and reports; occasional essays. *W. F.*, at 10:30. Professor PENN.
(Must be preceded by 7 or its equivalent.)

9. English Literature. Tennyson and Browning. Readings, class-room study and interpretation of texts, and occasional papers by members of the class. *W. F., at 10:20.* Assistant Professor PENN.
- 10a. American Literature. (a) Sectional Development; (b) Growth of Nationality; (c) Present Tendencies. The leading writers in prose and verse will be considered first as to their intrinsic worth, and, secondly, as illustrative of national development. *First semester, M. W. F., at 11:30.* Assistant Professor BELDEN.
11. *First semester:* History of the English Language. Lectures and textbook. *Second semester:* Study of Modern Prose Style, based upon masterpieces of representative authors. Essays and reports. *T. Th. S., at 11:30.* Professor ALLEN.
12. Anglo-Saxon. Prose and Poetry. *M. W. F., at 11:30.* Professor ALLEN.
13. Middle English. *W. F., at 8:30.* Professor ALLEN.
- 14a. The French Element in English. *First semester, W. F., at 9:30.* Professor ALLEN.
Knowledge of French and Latin necessary.
- 14b. Principles of English Etymology. *Second semester, W. F., at 9:30.* Professor ALLEN.
15. Studies in Anglo-Saxon, based on Beowulf and the Wuelker-Grein Bibliothek. *T. Th. S., at 3.* Professor ALLEN.
16. Gothic. Introduction to Germanic Philology, with special reference to English. *M. W. F., at 3.*

Any course may be taken by students properly qualified, and may be counted towards the degree of A. B., or the degree of B. S. Courses 1, 2b, 3, 4, 10a, will not be counted towards the Master's degree. Courses 9, 15, and 16 are Graduate courses.

Courses 5 and 6 and Courses 8 and 9 are given only in alternate years. Students will be admitted only to such courses as they are prepared for. They should in all cases consult the professor before making choice of a course.

A special medal, known as the "McAnally Medal," is offered for the best essay, thesis, or poem by members of the Senior class, competing under certain rules laid down by the founder of the prize. Subject for 1901, "American Historical Novels."

Latin.

Professor JONES; *Assistant Professor JOHNSTON; Acting Assistant Professor NEWCOMER.

The following courses are offered :

1. Sallust and Vergil, with sight-reading. Three Sections. Section I, *M. W. F.*, at 9:30; Section II, *T. Th. S.*, at 9:30; Section III, *M. W. F.*, at 8:30. Professor JONES and Acting Assistant Professor NEWCOMER.
Text-books: Herberman's Catiline; Greenough and Kittredge's Vergil; Allen and Greenough's Latin Grammar; Guerber's Myths of Greece and Rome.
2. Latin Prose Composition (Elementary Course). *W. or S.*, at 9:30. Professor JONES and Acting Assistant Professor NEWCOMER.
3. Livy and Horace. Two Sections. Section I, *M. W. F.*, at 11:30; Section II, *T. Th. S.*, at 11:30. Professor JONES and Acting Assistant Professor NEWCOMER.
Required: Latin, 1.
Text-books: Lord's Livy; Shorey and Kirkland's Horace; Allen and Greenough's Grammar.
4. Latin Prose Composition (Second Course). *T. or F.*, at 11:30. Professor JONES and Acting Assistant Professor NEWCOMER.
Required: Latin 2.
Text-book: Gildersleeve and Lodge's Latin Composition.
5. Roman Public and Private Life. (a) Cicero and Pliny, selected letters; (b) Juvenal and Martial, *M. W. F.*, at 10:30. Professor JONES.
Required: Latin 1, 3.
6. Rapid Reading. *T. Th. S.*, at 8:30. Professor JONES.
Required: Latin 1, 3.
7. Roman Drama (Plautus and Terence). *T. Th. S.*, at 3. Acting Assistant Professor NEWCOMER.
Required: Latin 1, 3.
8. Roman Literature, based upon Smith's *Selections*. *T. Th. S.*, at 11:30. Professor JONES.
Required: Latin 1, 3, 5, or equivalent.
9. Latin Prose Composition (Advanced Course). *T. Th.*, at 8:30. Acting Assistant Professor NEWCOMER.
Required: Latin 2, 4.
10. History of the Latin Language. Sounds, inflections, syntax. *M. W. F.*, at 8:30. Professor JONES.

This course is primarily for graduates, but is open to undergraduates of special attainments.

Courses 1, 2, 3, 4, 5, 6 are primarily for undergraduates; courses 7, 8, 9 for undergraduates and graduates, and course 10 primarily for graduates.

*Absent for the session of 1899-1900.

Greek.

*Professor MANLY; Acting Professor KYLE;†Assistant Professor PICKARD.

1. Elementary Greek. *Both semesters, M. W. F., at 8:30.*
White's First Greek Book; Gleason's Gate to the Anabasis.
Assistant Professor PICKARD.
2. Xenophon's Anabasis. *Both semesters, M. W. F., at 10:30.* Assistant Professor PICKARD.
3. Lysias' Select Orations. *First semester, M. W. F., at 9:30.* Acting Professor KYLE.
4. Homer's Odyssey, I—IV. *Second semester, M. W. F., at 9:30.* Acting Professor KYLE.
5. Greek Prose Composition. *First semester, Th. S., at 9:30.* Assistant Professor PICKARD.
6. Greek Tragedy. Aeschylus' Prometheus Bound; Sophocles' Antigone; Euripides' Hippolytus. *First semester, T. Th. S., at 8:30.* Acting Professor KYLE.
7. Greek Theater. *First semester, T., at 10:30.* Acting Professor KYLE.
8. Demosthenes. Select Orations. *Second semester, T. Th. S., at 8:30.* Acting Professor KYLE.
9. Greek Life. Manners and Customs of the Ancient Greeks. Lectures illustrated by maps, charts, photographs and stereopticon views. *Both semesters, W. F., at 2.* Acting Professor KYLE.
10. Homer's Iliad and Odyssey, with Lectures on the Manners and Customs of the Homeric Period. *Both semesters, T. Th., at 3.* Acting Professor KYLE.
11. History of Greece. Special periods will be minutely and systematically considered. *Either semester, M. W., at 10:30.* Acting Professor KYLE.
12. Historical Greek Grammar (Graduate). *Th. S., at 11:30.* Acting Professor KYLE.
13. Seminary. The work will be in Euripides and is intended for graduates. *Two hours a week.* Acting Professor KYLE.

*Absent during the session of 1900-1901.

†In charge during session of 1900-1901.

Classical Archaeology.

Professor PICKARD.

The following courses are offered:

1. History of Greek Art. An introductory study of Assyrian and of Egyptian Art, followed by a special study of the development of Greek Architecture and Sculpture from the VII Century B. C., to the I Century A. D. *T. Th. S., at 2.*

2. "Homeric Art," or Art of Primitive Greece. Lectures based on the latest excavations and publications. *First semester, M., at 2.*
3. Introductory study of Greek Vases and Vase Paintings; based on Ravet and Collignon's "La Ceramique Grecque." *Second semester, M., at 2.*
4. Etruscan and Graeco-Roman Art. *M. W., at 9:30.*
Study of Etruscan Art is based on Martha, "L'Art Etrusque."
Study of Graeco-Roman Art is carried down to Byzantine times.
5. Topography and Monuments of Athens, based on a careful study of Pausanias. *T. Th., at 8:30.*
6. Roman Life. *One semester, two hours a week.* A special study of the extant remains, particularly in Rome and Pompeii. No knowledge of Latin *required.* *T. Th., at 9:30.*
7. Archaeological Seminary. Interpretation of monuments and discussion of disputed points in the history of Greek Art and Greek artists.
8. History of Renaissance Painting. *First semester, Painting of the Netherlands and of Germany; Second semester, Italian Painting.* *T. Th. S., at 4.*
9. History of Modern Painting. *W. F., at 2.*
10. Mythology and Art. *W. F., at 4.*

Course 5 alone *requires* a knowledge of Greek. Courses 5 and 7 are primarily Graduate electives.

Course 10 is open to Freshmen. Courses 1, 6 and 8 may be taken by Freshmen with approval of the Professor.

Museum of Classical Archaeology:

An excellent beginning has been made in equipping a laboratory for the study of Classical Archaeology. For this purpose the third floor of the west wing of Academic Hall, a room 110x86 feet, is fitted up. It is now supplied with models of temples, illustrating the three orders of Greek Architecture, and with fifty plaster casts of the most famous specimens of Greek and Roman Art. These are arranged chronologically, and with them are hung one hundred and fifty framed photographs of other works of classic art. Besides these, the Museum possesses about a thousand photographs, and a fine collection of lantern slides.

Renaissance Painting:

To illustrate the course in Renaissance Painting, a large number of carbon photographs of the masterpieces of Flemish, Dutch, and Italian painting have been framed and hung in the gallery near the Museum of Classical Archaeology.

Romance Languages.

Professor WEEKS; Mr. HAWKINS; Mr. DU PONCOT; Mr. HAMILTON.

FRENCH.

1. Elementary Course. French Prose and Composition. Grandgent's French Grammar, Super's Reader. Section I, T. Th. S., at 8:30; Section II, M. W. F., at 8:30; Section III, M. W. F., at 10:30; Section IV, T. Th. S., at 9:30. Mr. HAWKINS and Mr. HAMILTON.

2. Modern Fiction and Plays. Composition, sight-reading. M. W. F., at 9:30. Mr. HAMILTON.

This course is meant for the second year's study in French. Much ground will be covered, and especial attention paid to pronunciation. Several of the books read are here mentioned: Some one of Erckmann-Chatrian's better stories; some of Daudet's short stories; de Musset's *Pierre et Camille*; Me. Greville's *Dosta*; de Vigny's *La Cacher Rouge*; Sandeau's *Mademoiselle de la Seigniere*; Augier, *Le Fils de Gdboyer*; Lamartine's *Jeanne d' Arc*.

3. A course parallel to the second year's work under (2) is given, intended especially for training in conversation and composition. Besides some of the texts mentioned in (2) many short stories are read with reports and discussions in French. M. W. F., at 10:30. Mr. HAWKINS.

4. The French Drama. M. W. F., at 9:30. Professor WEEKS.

In this course the development of the drama and the theatre in France will be studied systematically. Attention will of course be paid to the conditions of the drama in other countries. The instructor will feel free to devote the last two months of the year to some other branch of French literature if desirable.

(Open to Seniors and Graduates.)

5. General View of French Literature. Rapid Reading. T. Th. S., at 9:30. Professor WEEKS.

A great deal of ground is covered in this course; much pronouncing is done, very little translation. This course is conducted entirely in French. Students do outside reading, and hand in written work in French. The first semester is devoted to the 17th and 18th centuries. One or more plays of the great classical dramatists are read, together with several orations of Bossuet. In the 18th century two of Voltaire's plays and one of Beaumarchais' are read. The second semester is devoted to the 19th century. A story and a play by Hugo are read, and among other things the following works: de Vigny's *Cinq Mars*; About's *Le Roi des Montagnes*; de Bornier's *La Fille de Roland*; de Banville's *Gringotre*; Labiche's *Moi* (Allyn & Bacon's edition); Coppee's *On Rend l'Argent*, and his *Le Pater* (Holt & Co.); a volume of de Musset's Poems and two of his Proverbs; Rostand's *Cyrano de Bergerac*.

6. The Classic Period of French Literature. T. Th. S., at 10:30. Professor WEEKS.

During the first semester one of Pascal's works will be read, with lectures on Jansenism. An ability to understand spoken French is a requisite for this course. During the remainder of the year some subject desired by the students may be taken up. Last year the beginnings of French lyric poetry were read in this way.
(Open to Seniors and Graduates.)

7. Old French. Paris and Langlois' *Ohrestomathie*, *Ajol* and *Le Covenant Vivien* will be read. The course is conducted entirely in French. *M. W. F.*, at 10:30. Professor WEEKS.

This course is meant for graduates. Occasionally a Senior who has taken with high credit the preceding work and who is making a specialty of Romance Languages, is allowed to elect this course, which can be pursued advantageously for two successive years.
(Graduate Course.)

ITALIAN.

8. Beginning Course. *T. Th. S.*, at 11:30. Mr. HAWKINS.

In this course no composition work is done, the main object of the course being to acquire a rapid reading knowledge of modern Italian. Careful attention is paid to pronunciation. As soon as possible students begin to read aloud without translating.

SPANISH.

9. Beginning Course. *T. Th. S.*, at 10:30. Mr. DU PONCOT.

This course is parallel to the one in Italian, and the same methods are employed. Edgren's Grammar and Ramsay's Reader are used.

10. Advanced Course. *M. W. F.*, at 11:30. Mr. DU PONCOT.

This course will be conducted mainly in Spanish, and is meant as a preparation for teachers of Spanish, or for those who expect to need the language in Spanish-American countries.

PHONETICS.

11. General Introduction to Philology. *First semester, M. W. F.*, at 2. Professor WEEKS.

An effort is made in this course to study the phenomena of speech sounds from a physiological standpoint. The University has established a laboratory of Experimental Phonetics for the more accurate study of the living speech.
(Graduate Course.)

12. Seminar. *Two hours a week.*

An opportunity is here given for advanced work in special subjects.

Germanic Languages.

Professor HOFFMAN; Mr. IWERT; Mr. STRONG.

The following courses are offered:

1. Beginning Course in German. Section I, *T. Th. S.*, at 8:30; Section II, *M. W. F.*, at 8:30; Section III, *M. W. F.*, at 10:30. Professor HOFFMAN; Mr. IWERT; Mr. STRONG.

Text-books: Thomas' Practical Grammar; Van Daell's Reader; Storm's Immense; Volkmann's Kleine Geschichten; Schiller's Der Neffe als Onkel.

2. Course in German Reading, Syntax and Composition. Section I, *M. W. F.*, at 9:30; Section II, *M. W. F.*, at 10:30. Mr. IWBART; Mr. STRONG.

Text-books: Helbig's *Komödie auf der Hochschule*, Doktor Wespe by Benedix, Heine's *Hatzreise*, Schiller's *Wilhelm Tell*, Harris' *Prose Composition*, Thomas' *Grammar*.

3. Schiller's Dramas and Ballads. Composition. Lectures on Schiller's Life and Works. *T. Th. S.*, at 10:30. Professor HOFFMAN.

In this course only the last five dramas of our author will be read in class, and his ballads as compiled by Johnson; the remainder of his poetic, dramatic, as also his historic productions, will be studied in lectures. The work will be largely conducted in German.

4. Goethe and Lessing. Lectures on Their Works. German Essays. *M. W. F.*, at 9:30. Professor HOFFMAN.

This course is conducted wholly in German and requires, therefore, an understanding of spoken German.

5. Poetry of the Nineteenth Century. *T. Th. S.*, at 9:30. Professor HOFFMAN.

It will be the aim in this course to give a general view of the German poetry of this century, but to study more particularly the lyric and patriotic poetry of modern time. The course will be conducted wholly in German.

6. Conversational German. *M. W. F.*, at 3. Professor HOFFMAN.

One year of German is required for entrance in this course. Stern's *Studien und Plaudereien*, Auf der Sonnenseite, Baumbach's *Waldnovellen*, Stern's *Geschichten vom Rhein*, are used as conversation guides. The home, society, business, travel, etc., are made additional topics of conversation.

7. German Literature of the XVIII and XIX Centuries. *T. Th. S.*, at 2. Professor HOFFMAN.

- 8a. Middle High German. *M. W. F.*, at 11:30. Professor HOFFMAN.

Paul's *Mittelhochdeutsche Grammatik*; Wolfram von Eschenbach. Lectures on the Literature of the M. H. German Period.

- 8b. Old High German. *M. W. F.*, at 11:30. Professor HOFFMAN.

Braune's *Althochdeutsche Grammatik* and *Althochdeutsches Lesebuch*.

- 9a. Historical German Grammar. *T. Th. S.*, at 3. Professor HOFFMAN.

Courses 1 and 2 are primarily for undergraduates.

Courses 3, 4, 5 and 6 are for undergraduates and graduates.

Courses 7, 8a, 8b, and 9a are primarily for graduates, but also open to undergraduates who are prepared to take them.

NOTE.—Of the courses 7, 8a, 8b, 9a, not more than two can be given during any one semester.

History.

*Professor LOMB; Acting Assistant Professor VIOLETTE.

The following courses are offered:

1. General History. A course in the General History of Europe, presupposing such elementary knowledge as may be obtained from the study of Myers' General History or its equivalent. *T. Th. S., at 10:30.* One or more additional sections will be formed.
2. English and American History. *First semester.* The Political History of England. Special attention will be given to the growth of political institutions. *Second semester.* American History. A general survey of American History from the Period of Colonization to the Present. *T. Th. S., at 8:30.* An additional section will be formed.
3. Theory of Politics and Jurisprudence. *First semester.* Theory of Politics. An historical and critical study of the theories of the nature and origin of the State and an analysis of rights and sovereignty. *Second semester.* Theory of Jurisprudence. This course treats of the nature, sources, and classification of law and includes a consideration of the general principles of private law. Must be preceded by courses 1 and 2. *M. W. F., at 11:30.*
4. Comparative Constitutional Law. A comparative study of the constitutional law of the principal states of Europe and America. The course includes a consideration of the formation of the principal constitutions. Must be preceded or accompanied by course 3. *T. Th. S., at 11:30.*
5. History and Science of Administration. A study of the nature and function of the administration and its relation to the legislative and judicial departments. Governmental structure will be studied in detail and local government will be considered with reference to recent developments. Must be preceded or accompanied by course 3. *M. W. F., at 3.*

Undergraduate: Courses 1, 2.

Undergraduate and Graduate: Courses 3, 4.

Graduate: Course 5.

Economics.

Professor HICKS.

The following courses are offered:

1. Theory of Economics and of Finance. A course in the fundamental principles of economics and of finance. The subjects are first covered by lectures, after which a comparative study is made of the views of representative authors. *M. W. F., at 3.*
2. Economic History. A study of the industrial development of England, the United States and Missouri, with special reference to the economic problems of society. This course must be preceded or accompanied by course 1. *T. Th. S., at 8:30.*

*Absent during session of 1899-1900.

3. **Economic Problems.** A critical study of some of the leading economic problems: Socialism, Problems of Labor, Money, Transportation and the Tariff. This course must be preceded by course 1, and preceded or accompanied by course 2. *M. W. F., at 2.*
4. **Financial Systems.** An historical study of the general development of financial systems, including a detailed investigation of the history of public finance in the United States and Missouri, followed by a comparative study of the revenue systems of the leading nations and of some of the American commonwealths. Open to students who have taken courses 1, 2, 3. *T. Th. S., at 2.*
5. **Seminar.** An opportunity is here given for the advanced study of questions of economics and finance. May be elected for 2, 3, or 4 hours. Open only to such students as obtain special permission.
Undergraduate: Course 1.
Undergraduate and Graduate: Courses 2, 3, 4.
Graduate: Course 5.

Philosophy.

Professor THILLY; *Professor _____.

The following courses are offered:

1. **Logic and Theory of Knowledge.** *M. W. F., at 10:30.*
2. **Experimental Psychology.** *T. Th. S., at 2.*
3. **Ethics.** *T. Th. S., at 9:30.*
4. **Introduction to Philosophy.** *M. W. F., at 3.*
5. **History of the Development of Thought.** *M. W. F., at 9:30.*
6. **Pedagogical Psychology.** *M. W. F., at 8:30.*
7. **Advanced Psychology.** *M. W. F., at 2.* For Undergraduates and Graduates.
8. **Child Psychology.** *T. Th. S., at 8:30.* For Undergraduates and Graduates.
9. **History of Ancient and Mediaeval Philosophy.** *T. Th. S., at 10:30.* For Undergraduates and Graduates.
10. **History of Modern Philosophy.** *T. Th. S., at 11:30.* For Undergraduates and Graduates.
11. **Recent Philosophical Theories.** *T. Th. S., at 11:30.* For Undergraduates and Graduates.
12. **Modern Criticism.** *T. Th. S., at 3.* For Graduates. See Graduate Department.
13. **Seminary for Psychology and Advanced Laboratory Work.** See Graduate Department.

Courses 1, 2, and 6 may be taken with advantage by Freshmen.

*A Chair of Experimental Psychology has been established by the Board of Curators and will be filled before the opening of the next session.

Mathematics.

Professor FELLOWS; Assistant Professor DEFOE; Mr. FLEET; Mr. MOORE;
Mr. SELSOR and Mr. GLADNEY.

Primarily for Undergraduates:

1. Trigonometry, Solid Geometry and Analytic Geometry. *M. W. F., at 11:30 and T. Th. S., at 11:30.* Professor FELLOWS; Assistant Professor DEFOE; Mr. MOORE; Mr. SELSOR and Mr. GLADNEY.
Texts: Phillips and Strong's Trigonometry, Gore's Geometry, and Tanner and Allen's Analytic Geometry.
2. Advanced Algebra. *M. W. F., at 9:30, and T. Th. S., at 10:30.* Assistant Professor DEFOE; Mr. FLEET and Mr. GLADNEY.
Text: Hall and Knight's Higher Algebra.
3. Analytic Geometry and Differential and Integral Calculus. *T. Th. S., at 8:30.* Assistant Professor DEFOE.
Texts: Tanner and Allen's Analytic Geometry and Byerly's Differential Calculus.
Course 3 is open to students who have taken course 1.
4. The Elements of Mechanics. *T. Th. S., at 9:30.* Professor FELLOWS.
Text: Loney's Statics and Dynamics.
Course 4 is open to students who take or have taken course 3.

For Undergraduates and Graduates:

5. Differential and Integral Calculus. *T. Th. S., at 9:30.* Assistant Professor DEFOE.
Text: Byerly's Integral Calculus.
Course 5 is open to students who have taken course 3.
6. Theory of Equations and Determinants. Introduction to the Theory of Invariants. *M. W. F., at 9:30.* Professor FELLOWS.
Text: Burnside and Panton's Theory of Equations.
- 7a. Infinite Series and Products. *First semester, M. W. F., at 8:30.* Professor FELLOWS.
- 7b. Solid Analytic Geometry. *Second semester, M. W. F., at 8:30.* Professor FELLOWS.
Text: Smith's Solid Geometry.
8. Advanced Analytic Geometry. *M. W. F., at 11:30.* Professor FELLOWS.
Text: Salmon's Conic Sections.
9. Advanced Mechanics. Dynamics of a Rigid Body. *M. W. F., at 4.* Assistant Professor DEFOE.
10. Differential Equations. *T. Th. S., at 8:30.* Professor FELLOWS.

Primarily for Graduates:

11. Spherical Harmonics and Potential Function. *M. W. F., at 10:30.* Professor FELLOWS.
12. Theory of Functions (Introductory Course). *T. Th. S., at 4.* Assistant Professor DEFOE.
13. Theory of Functions (Second Course). *M. W. F., at 8.* Professor FELLOWS.

Astronomy.

Professor ———.

[This Chair is now vacant. The work in Astronomy required in the course in Engineering has been given during the session of 1899-1900 by the Professor of Mathematics, and during the session of 1900-1901 only courses required in Engineering will be given.]

1. Popular Astronomy. Lectures, recitations, and occasional night observations. Treatment non-mathematical. *T. Th. S., at 9:30.*
Text: Newcomb's Popular Astronomy, Library Edition.
2. General Astronomy. Lectures, recitations, and occasional night observations. *M. W. P., at 11:30.*
Trigonometry required. Text: Young's General Astronomy.
- 3a. Practical Astronomy (for Seniors in Civil Engineering). Recitations and practical work in the Observatory. *First semester, three hours a week.*
Text: Doolittle's Practical Astronomy.
- 3b. Geodesy and Least Squares (for Seniors in Civil Engineering). Recitations and practical work in the field. *Second semester, three hours a week.*
Text: Gore's Geodesy.
4. Spherical and Practical Astronomy. Problems of Spherical Astronomy. Theory and practical use of instruments. *Three hours a week.*
Calculus required. Text: Chauvenet's Spherical and Practical Astronomy.
5. Spherical and Practical Astronomy. Continuation of Course 4. *Three hours a week.*
6. General and Practical Astronomy. A combination of Courses 2 and 4. *Three hours a week.*
7. Theoretical Astronomy. Theories of the undisturbed and disturbed motions of comets and planets. *Three hours a week.*
(Graduate Elective.)
A thorough course in Calculus and Analytic Geometry is required.
Text: Watson's Theoretical Astronomy.
Required: For B. S. in C. E., Courses 3a and 3b.

The Laws Astronomical Medal:

A medal, called the "S. S. Laws Astronomical Medal," is offered annually at Commencement to the student who stands highest in Astronomy, and has at the same time attained a high average of general scholarship. An original thesis written on some astronomical subject, and showing capacity for scientific investigation, is required.

The Laws Observatory:

The Observatory, a building 84 feet long from east to west, and from 14 to 30 feet wide, stands on an elevated portion of the campus. The equipment consists of a 7½-inch equatorial refracting telescope by Mers and Sohne, of Munich, a 2 1-10-inch transit instrument by Brunner, of Paris, an altitude and azimuth instrument of 2½ inches in aperture, sidereal and mean-time clocks, sidereal break-circuit chronometer, chronograph, sextant, micrometer, and outfit of smaller instruments.

Clocks and instruments are mounted on piers of solid masonry, isolated from the floors and walls of the buildings, and are provided with the usual electrical connections. The dome of the telescope is 18 feet in diameter. A cone of 14 feet in diameter, which revolves on balls, shelters the altitude and azimuth instrument. The transit room, which has three slits in the walls and roof for observation, contains the transit instrument, chronograph, and sidereal clock.

There is in the Observatory a valuable collection of astronomical books and pamphlets, and several of the best astronomical periodicals are regularly received.

In the year 1880, Dr. S. S. Laws, then President of the University, contributed largely from his private funds toward the improvement of the Observatory building and instruments. In recognition of his generosity the Board of Curators named the Observatory in his honor.

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

1. Mechanics, Sound and Light. *First semester*, Experimental Lectures and recitations, T. S., at 1:30; Laboratory, Th., at 1:30. *Second semester*, Lecture, Th., at 1:30; Laboratory, T. S., at 1:30. Professor LIPSCOMB or Mr. GRIFFITH.

2. Heat, Electricity, and Magnetism. *First semester*, Lectures, M. W., at 10:30; Laboratory, F., at 1:30. *Second semester*, Lecture, F., at 10:30; Laboratory, M. W., at 1:30. Professor LIPSCOMB.

Open to all Academic students who have taken course 1, or its equivalent. Texts: Carhart's University Physics, Part II; Laboratory, Nichols (Vol. 1), and Gee & Stewart.

3. A course in General Physics, designed especially for Engineering students. Lectures and Laboratory, T. Th. F., at 1:30. Professor LIPSCOMB.

Required of all Engineering students, elective in Academic courses.

- 4a. Special Laboratory work in Mechanics, Heat and Light. *First semester*, T. Th. S., at 1:30. Professor LIPSCOMB or Mr. GRIFFITH.

(Third year Agriculture.)

Elective in Academic courses.

- 5b. The Practical Application of Electricity in Medicine and Surgery.
First semester, T. Th. S., at 9:30. Professor LIPSCOMB.
 (Fourth year Medical.)

Elective in all Academic courses.

- 6a. The Theory of Heat. *First semester, three times a week.*
 Text: Maxwell.

- 6b. The Theory of Light. *Second semester, three times a week.*
 The basis of the work in this course is Preston's Theory of Light.

- 7a. Advanced Experiment Work in Heat, Light and Electricity. *Three times a week.*

- 7b. Mathematical Theory of Electricity and Magnetism. *Second semester, three times a week.*

Courses 6a, 6b, 7a and 7b are open only to those students who have taken 1 and 2 or their equivalent.

9. Laboratory. Advanced measurements and special investigations.
Two to five times a week.

Open only to those who have had courses 1, 2, 6a, 6b, 7a and 7b, or an equivalent amount of work.

Chemistry.

Professor BROWN; Assistant Professor CALVERT; Mr. MOORE.

1. Experimental Chemistry. Laboratory work and recitations. *Both semesters, three times a week.*

This class is intended for those who have not previously taken Chemistry.

2. General Inorganic Chemistry. Lectures, laboratory work and recitations. *Both semesters, three times a week.*

3. Organic Chemistry. (Introductory Course.) Lectures, laboratory work and recitations. *First or second semester, three times a week.*

4. Organic Chemistry. Lectures, laboratory work, and recitations. *Both semesters, three times a week.*

- 5a. or 5. Quantitative Chemical Analysis. Laboratory work, and lectures. *First semester or first and second semesters, three times a week.*

- 6b. Quantitative Chemical Analysis. Laboratory work. *Second semester, three times a week.*

7. Advanced Laboratory Work. Inorganic and Organic. *Daily.*

- 8b. Chemical Theory. Lectures and recitations. *Second semester, three hours a week.*

For this course 2 and 3 or 4 should be taken.

- 9a. History of Chemistry. Lectures and recitations. *First semester, Three hours a week.*

For this course 2 and 3 or 4 should be taken.

- 10b. Physical Chemistry. Lectures, laboratory work, and recitations. *Second semester, three times a week.*
- 11a. Metallurgy. Lectures and recitations. *First semester, three hours a week.*
- 12a. Technical Chemistry. *First semester, three times a week.*
 Required for B. S. in S. E., 2 and 12a; for B. S. in C. E., M. E., and E. E., 2 and 11a.
 Elective: All courses.
 Where days and hours are not stated these will be arranged to suit the class.

Geology and Mineralogy.

*Professor MARBUT; Acting Assistant Professor LEONARD.

1. Physiographic Geology. Lectures, written exercises, laboratory and field work. *M. W. F., at 10:30.*
 Primarily for Freshmen and Sophomores.
 Course 1 is designed both for those students who desire a general knowledge of the processes involved in the development of the earth, and as a foundation for those who intend to pursue the subject further. The earth is treated as an organism and the course is intended to furnish a grasp of its main constituents and their distribution and arrangement as well as the processes which have produced and arranged them. It is primarily a study of evolution as applied to the earth.
2. Historical Geology and Paleontology. Laboratory and field work with occasional lectures. *Three times a week.*
 This course is open to those students who have had courses in Zoology.
3. Meteorology. Recitations, lectures and laboratory work. *First semester, three times a week.*
4. Mineralogy and Crystallography. Recitations and laboratory work. *One semester, three times a week.*
5. Petrography. Lectures and Laboratory work. *Three times a week with occasional conferences.*
 This course is intended primarily for Seniors and is open only to those who have taken courses 1 and 4.
6. Geomorphology. A course in geographic evolution. Lectures, library, laboratory and field work. *Three times a week.*
 Open to students who have had course 1 and intended primarily for Seniors and Graduates.

Zoology.

Professor LEFEVRE; Dr. THOM; Miss STEELE.

The following courses are designed to meet the needs of three classes of students; (a) those who desire to become acquainted with the

*Absent during session of 1899-1900.

elements of Biology, as part of a liberal education; (b) those who intend pursuing courses of study in Agriculture, Medicine, or Sanitary Science, and (c) those who have in view the teaching of Zoology, or who wish to carry on advanced studies in Zoology.

The Zoological Laboratory is a commodious building, and is well equipped with necessary apparatus, collections, books and periodicals. Ample opportunities for research are afforded to students who are properly qualified.

1. **General Biology.** This course is intended to give a general survey of the whole field of biological science, and to familiarize the student, by instruction and individual observation, with a typical series of living forms. In the laboratory each student studies, by means of the microscope or dissection, selected animals and plants, from the simpler forms, such as amoeba and yeast, to the complex, such as the earth-worm, the fern, the frog and the flowering plant. The main object in view is to train the student in the use of personal observation, and at the same time to lay the foundation of the general principles and facts of biological science, either as part of a liberal education, or as preparation for professional study in Agriculture, Medicine, Sanitary Science, Zoology or Botany. *Both semesters, three times a week. Lecture, T., at 11:30; Laboratory, Section I, T. F., Section II, Th. S., at 1:30.* (Undergraduate.)

Texts: Parker, *Elementary Biology*; Morgan, *Animal Biology*.

2. **Comparative Anatomy of Vertebrates.** A detailed study of the anatomy of a typical series of Vertebrates. The course is designed for those who wish to make a study of Physiology, for the medical student and for the specialist in Zoology. *Both semesters, three times a week. Lecture, T., at 1:30; Laboratory, Th. S., at 1:30.* (Undergraduate.)

Texts: Parker & Haswell, *Text-book of Zoology*; Parker, *Zootomy*; Wiedersheim, *Comparative Anatomy of Vertebrates*.

3. **Histology. Microscopic Anatomy of Vertebrates.** *First semester, three times a week. Lecture, M., at 8:30; Laboratory, W. F., at 8:30.* (Undergraduate.)

Texts: Schaefer, *Essentials of Histology*; Piersol, *Normal Histology*.

4. **Embryology of Vertebrates.** The development of the chick is thoroughly studied in the laboratory from preparations of entire embryos and from sections, representing successive stages throughout the development. These observations are used in the lectures as a basis of comparison with the development of higher forms, including that of man. *Second semester, three times a week. Lecture, F., at 1:30; Laboratory, M. W., at 1:30.* (Undergraduate.)

Text: Marshall, *Vertebrate Embryology*.

5. **Neurology.** A course in the study of the central nervous system and terminal sense-organs of Vertebrates, open only to such students as have completed undergraduate courses in the Comparative Anatomy and Histology of Vertebrates. *Second semester, three times a week.* Lecture, *M.*, at 8:30; Laboratory, *W. F.*, at 8:30. (Graduate and Undergraduate).
 Texts: Edinger, Anatomy of the Central Nervous System; Obersteiner, The Central Nervous System.
6. **Cytology.** A study of the cell, with special reference to development and inheritance. Training is given in this course in the use of the finer methods of technique in cytological research. *First semester, three times a week.* Lecture, *M.*, at 8:30. Laboratory, *W. F.*, at 8:30. (Graduate and Undergraduate).
 Texts: Wilson, The Cell in Development and Inheritance; Hertwig, The Cell and Tissues.
7. **The Principles of Zoology.** A course of lectures designed to cover the main principles underlying zoological science. Collateral reading in the works of Darwin, Huxley, Spencer, Romanes, Weismann, Hertwig, Brooks and others. *First semester, twice a week, W. F.*, at 1:30. (Graduate and Undergraduate).
8. **Investigation.** (See announcement under Graduate Department.)
9. **Zoological Seminary.** Weekly meetings throughout the year at which current topics of zoological investigation are reported and discussed by instructors and students. (Graduate and Undergraduate.)

Botany.

Dr. THOM.

In the session of 1899-1900 Botany was taught in the Zoological Laboratory, and the following courses were given:

- I. Structural Botany. (Elective First Semester).
- II. Physiological Botany. (Elective Second Semester.)
- III. Cryptogamic Botany. (Elective First Semester.)
- IV. Systematic Botany and Oecology. (Elective Second Semester.)

In September, 1900, Botany becomes a separate chair and the following work is offered:

1. **Introduction to Botany.** The principles of Biology will be taught as a foundation for further work in Botany or Zoology. This work is included in course 1, Zoology. (Undergraduate.)
2. **Plant Morphology and Histology.** This course includes the usual study of structure, and the essentials of Botanical Microtechnique. *M. W. F.*, at 8:30-11:00. (Undergraduate.)
3. **Plant Physiology.** (Graduate and Undergraduate.)
4. **Cryptogamic Botany.** A course designed to follow the evolution of plants through the groups of Algae and Fungi to higher forms. *M. W. F.*, 1:30-4:00. (Undergraduate.)

5. **Systematic Botany and Oecology.** Course 5 is intended to combine the principles of classifications with the study of the biological relations of plants. Special emphasis will be laid upon original work. *T. Th. S., 1:30-4:00.* (Graduate and Undergraduate.)
6. **Investigation.** The student is trained in methods of investigation by the assignment of special problems for original work. *Topics and hours to be arranged with the instructor.*
(Undergraduate and Graduate.)
7. **Botanical Seminar.** The Seminar is designed to offer to advanced students an opportunity to familiarize themselves thoroughly by studies and demonstrations, with the current topics in Botany. *S., 3:00.* (Graduate and Undergraduate.)

Animal Physiology.

Professor CONNAWAY; Mr. PARKHURST.

The following courses are offered:

1. **Animal Physiology (Minor Course).** One lecture and two laboratory periods a week. *Second Semester, T. Th. S., at 8:30.*
2. **Advanced Course.**

Lectures, recitations, laboratory work, and reports upon assigned readings. Offered for students who desire to go more deeply into the literature and experimental methods of physiology than is possible in the Minor Course.

The following subdivisions are made:

- (a) **Physiology of the Blood, Digestion, Absorption, Secretion and Excretion.** *Three times a week.*
- (b) **Physiology of the Contractile Tissues, Circulation and Respiration.** *Three times a week.*
- (c) **Metabolism, Nutrition, Dietetics, and Reproduction.** *Three times a week.*
- (d) **Central Nervous System and Special Senses.** *Three times a week.*

Text: Foster's Physiology. Collateral reading: other advanced text-books and Journals of Physiology. Laboratory manual: Stirling's Practical Physiology. Reference Manuals; Sanderson, Schenck, Langendorff, Halliburton, Salkowski (in library).

Open to all who have completed courses in physics, chemistry, anatomy and histology.

Course (d) is open to advanced students in all Academic courses. Credit is given in the Medical Course for the above advanced work.

3. Teachers' course. *One hour a week. Time to be arranged.*

The purpose of this course is to furnish instruction in methods of teaching Physiology, and to give the students of Education an opportunity of applying their knowledge. Each student is required to make special preparation upon some assigned topic, both as to the subject-matter, and the methods of presenting it. The laboratory demonstrations necessary to the proper presentation of the topic must be prepared by the student. Course 1 or 2 must precede or accompany this course.

4. Investigation.

(a) The verification of the results of some recent physiological research.

(b) Original work along some selected line.

Open to students who have completed course 2, and show an aptitude for this work. *Time to be arranged with the instructor.*

Elocution.

Professor SCOTT.

The following courses are offered:

1. Foundation theory and practice of vocal culture and expression. Breathing for conscious voice-support; phonetics applied to syllabic form and enunciation; stress, inflection, quantity and quality; phrasing: movement and rhythm; melody, intonation, and cadence; analysis of short prose and poetic passages, for the recognition and establishment of the correlation of utterance with thought and feeling. *First semester, four sections: M. W. F., at 10:30 and 2; T. Th. S., 8:30 and 11:30. Text-book: Raymond's Orator's Manual.*

2. Principles of bearing, walk, and gesture; the practice of short oratorical extracts, with the study of the *rationale* of appropriate utterance and action. To be followed by the study of more extended passages and entire compositions, prose and poetic, as readings and recitations. This course must be preceded by course 1. *Second semester, four sections: M. W. F., at 10:30 and 2; T. Th. S., 9:30 and 11:30. Text-book: Raymond's Orator's Manual.*

3. Advanced work. The interpretative study of plays, scenes, poems, and imaginative literature generally. Selections will be made jointly by the Professor in charge and the class, from Shakspeare, Milton, Scott, Tennyson, Browning, Dickens, Poe, Ruskin, and other representative writers. The emotional and spiritual, as well as the intellectual, elements of literature will be the objects of study and embodiment. This course may run through two semesters, and must be preceded by courses 1 and 2. *T. Th. S., 10:30.*

4. Teachers' course. This course is offered to students in the Department of Education, and counts toward the Academic degree and the

Life Certificate to teach. It will comprise: (a) The criteria of vocal expression—time, pitch quality, and force—with copious examples; (b) the method of teaching children to read. *One hour a week, for two semesters.* Text-book: S. H. Clark's *How to Teach Reading in the Public Schools.* W., at 3.

For 1901 three prizes in cash—one of \$25, one of \$15, and one of \$10—are offered for public competition in declamation. The contest will be held in the second semester, and is open to students of Elocution only.

Sociology. .

Charles A. Ellwood, Ph. D., has been elected to fill this Chair. Courses will be announced in full time for the opening of the next session.

SCHOOL OF JOURNALISM.

Art and History of Newspaper Making. History of Printing, Evolution of the Newspaper, Typography, Presswork, Engraving.

Newspaper Making. Business management; cost and revenue; advertising; editorials, reporting, clipping from exchanges; method of criticism, etc.

Newspaper Practice. Exercises in editorial writing, in reporting, in editing copy, handling telegraph service, condensation, interviewing, gathering news, etc.

Current Topics. Constitutional law; Political Science; History of the United States and of Missouri; economic questions; the libel law and other laws pertaining to newspapers; live issues of the United States and foreign countries; study of the best newspaper models; lectures by men engaged in the active work of the profession.

A thorough knowledge of English and general literature is indispensable to every journalist.

1. *English.* This study will be pursued on the side of English History, Composition, and Rhetoric throughout the course.

2. *History.* Modern History will be required and also General History. The study of Mediaeval and Ancient History will not be required but may be taken as elective work.

3. *Political, Economic, and Sociological Studies.* Political Economy, Political Science, Finance, History of Banking and Coinage, History of Industrial Development, Constitutional law, International law, and Sociology will be studied throughout the entire course.

An opportunity will be given to acquire a good reading knowledge of such Modern Languages as French, German, and Spanish. They will not be required, but may be taken as elective work.

III. Department of Education.

FAOULTY.

RICHARD HENRY JESSE, LL. D.,
President.

JOSEPH MARTIN WHITE, A. B.,
Professor of Pedagogy.

The members of the Academic Faculty, page 13, and the instructors in the Industrial work required for a Life Certificate, are members of this Faculty.

Admission:

The requirements for admission to this Department are the same as to the Academic department. See pages 20-23.

Theory and Practice of Teaching.

Professor WHITE.

There are two distinct courses, one Elementary and one Advanced.

I. ELEMENTARY COURSE.

The Elementary course is intended to prepare teachers for the public schools of the State. Students who complete the work may receive a State Certificate which authorizes them to teach in the public schools of Missouri for a period of two years from the date of the certificate.

Persons desiring to take this course must meet the following requirements:

1. They must, before receiving the certificate, be free from all entrance requirements, and in making up such requirements, must not have taken within and without the University, more than eighteen hours a week of work.

2. They must take, or must have taken, at least twelve (12) hours' Academic work from the Freshman class of one of the courses outlined on pages 72-74 of this Catalogue.

3. They must, during the Freshman, or during a later year, take six (6) hours (three hours a week for two semesters) of Elementary Pedagogy

outlined below, and in the College of Agriculture and Mechanic Arts, six hours of Agriculture, or six of Horticulture, or six of Household Economics, or six of Shop-work, or six of Drawing. This work in the College of Agriculture and Mechanic Arts shall not count towards any Academic degree, but it may be counted for the industrial work required for the Life Certificate, and it may also be counted towards the degree of Bachelor of Science in Agriculture.

The following are the required studies in Pedagogy in the Elementary course:

- 1a. Elements of Pedagogy. *First semester, T. Th. S., at 11:30.*
- 1b. (1) School Management; (2) Methods of Teaching. Lectures
Second semester, T. Th. S., at 11:30.

These courses do not count for an Academic degree, or for the Life Certificate to teach.

For the required Industrial courses, see Index.

II. ADVANCED COURSE.

The advanced course is intended to prepare students to teach in the secondary schools of the State. This course leads to the Life Certificate, which entitles the holder to teach for life in any public school in Missouri.

To obtain this certificate the student shall fulfill the following conditions:

1. He shall meet the requirements for some Academic degree.
2. He shall elect and complete in a satisfactory manner not less than twelve (12) hours of Advanced Pedagogy.
3. In addition to what is required for an Academic degree, he shall complete in a satisfactory manner at least six hours in Agriculture, or Horticulture, or Household Economics, or Shopwork, or Drawing. This work may be done in the regular session or in the summer vacation, provided that the work offered in the summer vacation be sufficient in quantity.

Students that apply for the Life Certificate may take in any semester fifteen (15) hours of Academic work and three (3) hours of Industrial work, but in no case shall the number of hours exceed eighteen.

None of the Industrial work mentioned above may be counted toward an Academic degree, but six hours of it are required for the Life Certificate and all of it may be counted towards the degree of B. S. in Agriculture.

Graduates of the schools composing the Missouri College Union and of other reputable colleges and universities may obtain the Master's degree and the Life Certificate in one year by completing ten (10) hours

of Graduate work—of which three shall be in a Senior Pedagogy—and three additional hours of Advanced Pedagogy each semester.

The following work in Pedagogy is offered in the Advanced Course:

1a. History of Education. Lectures. Essays, Reports and Discussions. *First semester, M. W. F., at 10:30.*

1b. Educational Classics. Readings, Reports, and Discussions. *Second semester, M. W. F., at 10:30.*

2. Science of Education. Lectures, Recitations, and occasional Essays *Throughout the year, T. Th. S., at 3.*

Texts: McMurry's General Method, Lange's Apperception, Bain's Education as a Science.

3a. School Supervision. Lectures and Recitations. *First semester, M. W. F., at an hour to be selected.*

3b. Pedagogical Seminary. Discussion of Current Educational Questions. *Second semester, twice a week, at an hour to be selected.*

Courses 1a, 1b, 2, 3a, and 3b may be counted toward an Academic degree.

Courses in Industrial Education:

For the work offered in Agriculture and Horticulture, for the courses for teachers in Shop-work, Sloyd, and Drawing, and for the studies obtainable in Household Economics, see the portion of the Catalogue that describes the College of Agriculture and Mechanic Arts.

Experimental Psychology and Child Study:

A Chair in Experimental Psychology and Child Study has been established by the Board of Curators, and will be filled by the opening of the next session. For courses see under Philosophy, page 87. Candidates for the Life Certificate are advised to take work in Psychology.

Courses for Teachers in the Summer School:

In the summer of 1900, the University will offer courses in Agriculture and Horticulture, Biology, Chemistry, Physics, English, French, Greek, German, History, Latin, Mathematics, Shopwork, Sloyd, and Drawing. They are especially for the advantage of public school teachers of the State, though open in some subjects to regular students in the University. The first term of the summer work begins June 4. Circulars giving full details may be had upon application by letter to the University.

IV. Department of Law.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ALEXANDER MARTIN, LL. D.,
Professor of Law and Dean of the Faculty.

JAMES AULL YANTIS, LL. B.,
Professor of Law.

JOHN DAVISON LAWSON, LL. D.,
Professor of Law.

ANDREW WALKER MCALESTER, M. D., LL. D.,
Lecturer on Medical Jurisprudence.

HON. ELMER B. ADAMS, LL. D., Judge of the U. S. District Court for
the Eastern District of Missouri,
Non-resident Lecturer on the Law of Wills and Administration.

HON. JAMES B. GANTT, LL. D., Chief Justice of the Supreme Court of
Missouri,
Non-resident Lecturer on Corporations.

PAUL BAKEWELL, LL. B., St. Louis, Mo.,
Non-resident Lecturer on Patents and Trade Marks.

Requirements for Admission:

The candidate must be eighteen years of age and, if unknown to the Faculty, must bring satisfactory testimonials of good character.

JUNIOR CLASS.—For admission to the Junior Class, no examination in Law is imposed. Students may be admitted at any time during the session by fulfilling the requirements for entrance and by passing an examination upon the work in Law accomplished by the class at the date of the examination.

It is the purpose of the University to raise gradually the standard of Academic requirements necessary for admission to the Department of Law. Candidates for admission are earnestly advised, therefore, to complete, if they can, a college course, or at least a full course in a good high school.

Students may enter by certificate or diploma or by examination.

Entry by Certificate or Diploma.—Any applicant presenting to the Committee on Entrance by Diploma a certificate or diploma from the President or Principal of any Approved High School, Academy, Normal School

or College, showing that in any course of study in which said School, Academy, or College has been approved by the University for the Academic department, the applicant has accomplished with passing grades all the work required for admission to the Law department as hereinafter prescribed, may be admitted without examination. See Approved Schools, page 26.

Certificates or diplomas indicating or clearly implying the requisite qualification for admission to the Law department as hereinafter prescribed will also be honored: *First*, from all the Universities and Colleges which the Committee on Entrance by Diploma shall find to be of unquestionable high standing. *Second*, from all Normal Schools, High Schools and Academies whose courses and quality of instruction shall be found by the Committee on Entrance by Diploma to correspond with the standard of requirements for admission to the Law department of the University as hereinafter stated under the head of Entrance by Examination.

In the absence of such certificates or diplomas the applicant for admission must pass satisfactory examination before the Professors of the Academic department for the examination of applicants for admission to said Departments as follows:

Entrance by Examination.—A unit means a year's work (nine months) in one subject in a good High School, Normal School, or College, with five periods a week in the class-room or laboratory, each recitation lasting about forty minutes. Requirements for admission by examination are estimated in units, as will appear below.

In the fall of 1898 the requirements for admission were four units, as follows:

1. *History.*—The applicant was examined in the equivalent of the work given in Myers' General History—one unit.

2. *English.*—The examination was on the essentials of English Grammar (any text-book of High School grade) and Composition (no text-book). He was required to have read at least as much literature as is required in the first year of a good High School—one unit.

3. *Mathematics.*—The applicant was required to have a knowledge of Algebra, the equivalent of that found in Milne's High School Algebra up to Quadratic Equations. Instead of Algebra, Geometry was accepted as given in Phillips and Fisher's Plane Geometry—one unit.

4. *Latin.*—The examination in Latin was required to show a thorough mastery of Collar and Daniell's First Latin Book, or Gildersleeve's Latin Primer, or some other beginner's book fully equivalent to these—one unit.

These units represent the first year's work of an Approved High School. The student was required to pass without condition the examinations on at least three out of the four subjects required. On one of the

four subjects he might be conditioned, said condition to be made up in the first year in the University under arrangements to be approved by the Academic Professor of the subject.

In the fall of 1899 the requirements for admission, in addition to the requirements for admission in 1898, were four units, as follows:

1. *History*.—Green's Short History of the English People—one unit.
2. *English*. Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant was expected to have read, at least, as much literature as is required in the second year of a good High School—one unit.

3. *Latin*.—Three books of Caesar's Gallic War, and the Composition based thereon in Moulton and Collar's "Preparatory Latin Composition" or in Daniell's "New Latin Composition." For the Caesar, Nepos may be substituted—one unit.

4. *One unit* to be offered in any one of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. These units, along with the units of 1898, will represent two years' work in an Approved High School. The applicants may be conditioned on any two units, both to be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise one unit must be made up in the Junior year, and the other in the summer thereafter, or in the Senior year.

For the fall of 1900 the requirements for admission will be the same as those prescribed for the fall of 1899.

In the fall of 1901 the requirements will be twelve units, as follows:

1. *English*.—Three units—the same as prescribed for admission to the Academic department—see page 21.
2. *Latin*.—Two units—the same as prescribed above for the year 1899.
3. *History*.—Two units—the same as prescribed above for the year 1899.

4. *Five units*, to be offered from any of the following subjects: English, Mathematics, History, Latin, Greek, French, German, Physics, Chemistry, Biology. Any number of units may be offered in one subject, or only one may be offered in one subject. These twelve units represent three years' work in an Approved High School, which is approved for the Academic department of the University.

The student may be conditioned upon two units, both of which must be made up in the Junior year, provided that these do not make the total number of hours a week greater than eighteen. Otherwise one unit must be made up in the Junior year, and the other in the following summer, or in the Senior year.

No student will be allowed to graduate in Law until all Academic conditions that may have been incurred at entrance have been made up within the time prescribed, and under arrangements approved by the Academic Professors of the subjects in which the conditions have been incurred.

In any summer, students conditioned at entrance in Academic studies and those proposing to enter may avail themselves of the Summer School of the University, and receive credit for work done therein according to the rules of said school. See Appendix.

All examinations for entrance will be under the charge of the Academic Professors of the subjects required or offered for admission.

SENIOR CLASS.—No one will be admitted to the Senior class as a candidate for a degree unless he applies at the beginning of the year, is possessed of the academic education and moral character required for admission to the Junior class, and has passed a satisfactory examination upon the studies of the Junior year. In exceptional cases, upon failure in one or two branches only, the examination, as to those branches, may be postponed to some period during the term, and the applicant will be admitted to the class as a candidate for a degree, upon condition that he pass at the time appointed a satisfactory examination on such branches. But if the applicant achieves inferior grades generally on the subjects upon which he has passed examination his case will not be an exceptional one for entrance upon condition.

A certificate of admission to the bar is not accepted as a qualification for entrance to advanced standing or to the Senior class.

No one is permitted to pursue in one year the full course of two. No member of the Junior class is admissible to instruction in the Senior course.

GRADUATE CLASS.—No one will be admitted to this class as a candidate for the degree of LL. M. unless he holds the degree of LL. B. from the Law department of this University, or is a graduate of some other law school, whose course of instruction and study, upon which his degree is predicated, is equivalent to the course of instruction and study required for the corresponding degree in the Law department of this University. No admission to the Senior class or the Graduate class will be permitted after two weeks from the commencement of the school year.

SPECIAL CLASS.—For admission to instruction as special students, the same moral and academic qualifications are required which are prescribed for admission to the other classes, but if the applicant is twenty-one years of age, the qualification of high school attainments will not be required for his admission as a special student. Such special students will not be considered as candidates for graduation. For other restrictions, see page 25.

No qualifications in Law are required.

COURSES OF STUDY.

The principal objects of the courses of study adopted in the School is to qualify its graduates for an efficient and successful discharge of their duties as licensed attorneys. It has never been within the aim of the School to qualify its students for the mere purpose of passing the special examinations which may possibly take place at the bars to which they may seek admission. The courses of study have been adopted with the view of familiarizing the successful candidate for a degree with the principles of substantive law, and the law of remedial procedure, as prevailing in American jurisprudence. After a short study of the statutes and decisions of the State in which he expects to settle, he will deserve admission to the bar. As the degree of LL. B. from this Department entitles the graduate to admission to the bar of the State of Missouri, the Faculty can not overlook the fact that a fair knowledge of the general statutes of the State, and of the modifications which the common law has undergone in the decisions of the courts, is an essential qualification for admission to its bar. But, as there is a great similarity in the general statute and judiciary law of the Western, Northwestern, and Southwestern States, it is believed that what may be learned in that respect will be of benefit to a student settling in any of said States.

Undergraduate Course:

The undergraduate course covers a term of two years. There are two classes—Junior and Senior. Instruction is given daily to these classes in the form of lectures, recitations and examinations upon the text-books recommended, and upon leading cases furnished by the Faculty. Every Tuesday they participate in the exercises of a Moot-court.

I. The Junior class receives instruction in the following subjects:

1. Torts, Elements of Law of Real Property, and Criminal Law; by Professor YANTIS.
2. Contracts, Elementary Law, Bailments, Personal Property, Sales; by Professor LAWSON.
3. Negotiable Instruments, Parliamentary Law; by the DEAN, and Special Lecturers.

II. The Senior class receives instruction in the following subjects:

1. Real Property, Evidence; by Professor YANTIS.
2. Equity Jurisprudence, Civil Procedure at Common Law, in equity and under the code, Partnership, Corporations, Constitutional Law; by the Dean and Special Lecturers.
3. Insurance, International Law; by Professor LAWSON.
4. Law of Wills and Administration; by Special Lecturers.

The text-books recommended are as follows:

For the Junior Year—

On Elementary Law	Fishbach
On Elements of Law of Real Property.....	Warvelle
On Torts	Hale
On Contracts	Lawson
On Agency	Story, Meecham
On Sales	Lawson's Cases
On Bailments	Lawson
On Personal Property	Lawson's Cases
On Domestic Relations	Rodgers
On Negotiable Instruments	Tiedeman
On Parliamentary Law	Roberts, Cushing
On Criminal Law	Clark

For the Senior Year—

On Real Property	Tiedeman
On Wills	Chaplin
On Evidence	McKelvey
On Insurance	Richards
On International Law	Lawrence, Glenn
On Equity Jurisprudence.....	Bispham, Merwin, Fetter
On Civil Procedure	Martin, Bliss, Heard, Dexty
On Constitutional Law	Pomeroy, Cooley
On Corporations	Elliott, Thompson, Murfree
On Partnership	Pollock

Graduate Course:

This course is open to graduates of the Law department and to those of other law schools who have completed an equivalent course of study.

The object of the Graduate course is to provide the practitioner with a more extended and practical knowledge of important subjects embraced in modern law, than the limited time of the Undergraduate course permits. It is also intended to afford him assistance in prosecuting the study of any particular subject or branch of law which he expects to follow in his future practice.

The course of instruction embraces lectures and recitations on the following subjects:

Constitutional Law, Contracts, Corporations, Insurance, Trusts, Patents, Copyrights, Law of Homicide, Theory of Jurisprudence, Practice.

The student in this course is allowed to select any special subject in law for extended examination, to be prosecuted concurrently with the subjects embraced in the course. His investigations are directed by the Faculty, who advise him of the books and cases to consult, and afford him assistance and counsel.

It is believed that many licensed attorneys will find it to their advantage to take as special students the instruction in this course.

The text-books recommended for the Graduate course are as follows:

Cooley on Constitutional Limitations; Underhill on Trustees; May on Insurance; Walker on Patents; Bishop on Criminal Law; Thompson on Corporations; Holland's Jurisprudence; Pattison's Forms.

Special Course:

Students who do not wish to take any of the full courses, and who are not candidates for any degree, will be permitted to take an elective course, and pursue any branches of instruction given in any of the courses of the Department, the exercises of which do not conflict with one another or exceed the hours of work permitted to students in the Department. They will be classed as special students, and will receive from the Faculty certificates of the time spent in the study of the law and of the work therein accomplished.

Extension of Course to Three Years:

Students who enter the Department of Law in September, 1901, and thereafter must enter with the distinct understanding that the course of study leading to the degree of Bachelor of Laws will be extended from two years to three, said extension to take effect on and after the first of September, 1901.

This extension of the course to three years shall not affect students that may have entered upon the course prior to the first of September 1901. Such students will be allowed to graduate in the two years' course outlined in this Catalogue.

METHODS OF INSTRUCTION.

In the Department of Law instruction is given by means of Lectures, Recitations, Examinations, Seminariums, Moot-courts, and the required study of Treatises and Cases.

The first benefit inuring to the student who enters a good law school is to learn how to study law, as distinguished from merely reading it. A student in an attorney's office is too apt to continue, in his study of law, the superficial habit acquired by him in the perusal of newspapers, literary periodicals and novels.

On entering the School he is instructed in the proper methods of reading treatises and reports of cases, of examining questions of law, of taking notes of lectures, and of handling digests, dictionaries, and compilations of the law.

The Law Faculty is satisfied from experience that the highest results can not be reached by lectures alone, however clear and thorough they may be; but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction, and to examine critically well-considered cases illustrating the principles discussed in the lecture-room. For the purpose of ascertaining the progress of the student, and impressing upon him the necessity and advantages of precise and definite knowledge of the subject upon which he has received instruction, he should be required to stand frequent examinations on the work accomplished by him. He should also be required to take notes of the substance of the lectures, and of the cases furnished by the Professor for his investigation. In addition to lectures and recitations, the classes, after division into sections, are subjected to quizzes conducted by members of the class, appointed by the Professor for that purpose. The members are also required to explain and develop in the lecture-room orally and in writing, subjects assigned to them by the Professors. A combination of these different methods has, in the opinion of the Faculty, produced the most satisfactory results.

Moot-Court:

Every Tuesday a Moot-court is held, in which all Law students participate. In this court the matters discussed arise in some supposed cause. Regular pleadings are required, and when the cause is supposed to be in the Supreme Court, in addition to the pleading, papers are prepared necessary in actual practice, as the writ of error, assignment of errors, bill of exceptions embodying the instructions to the jury, ruling upon the admission or exclusion of evidence, motions for new trials, in arrest, etc. Briefs of points and authorities must also be submitted and filed. A member of the Faculty presides at the trial, determining all preliminary and incidental motions. A member of the Senior class or Graduate class is called to sit as special judge in each cause, who, at the next court held by the same Professor, gives his opinion in writing, subject to appeal to the member of the Faculty so presiding at the trial. Practical instruction in pleading is given by requiring half of the members of a class to draft pleadings in causes assigned to them, and to submit them to the other half. The pleadings thus drafted are discussed and settled in the class room, in the presence of the Professor giving instructions on that subject, and under his rulings.

DEGREES AND HONORS.

Degrees:

Members of the Senior class who have successfully passed the examinations of the Senior year will be entitled to receive the degree of Bach-

elor of Laws. Members of the Graduate class who have successfully passed the prescribed examinations will be entitled to receive the degree of Master of Laws.

All who receive from this University the degree of Bachelor of Laws are by law admitted, without further examination, to practice in all courts of the State of Missouri.

Honors:

Whenever a candidate for graduation attains a high degree of excellence in his class-work the degree of Bachelor of Laws or Master of Laws will be conferred upon him with distinction; and the words *cum laude* or *magna cum laude* will be incorporated in the diploma. In determining the required degree of excellence the student's conduct as a gentleman, as well as his attainments as a scholar, will be taken into consideration.

The members of the Senior class are all invited to write essays upon some subject in law, assigned to them by the Faculty before January 1 of each year. The essays so written are submitted to a committee of judges charged with the duty of designating the best two of said essays. The names of the authors of the best two essays are placed on the Commencement program. Students not writing essays as aforesaid, and not excused therefrom by the Law Faculty, shall not be eligible to any of the honors and distinctions heretofore mentioned as in addition to the right of graduation.

Prizes:

A prize of \$50, provided in the endowment fund of the Hon. James S. Rollins is awarded each year, at Commencement, to the member of the Junior Law class, who, by superior scholarship and moral conduct, has shown himself entitled thereto.

The Edward Thompson Company, Law Publishers, of Northport, New York, give annually to the author of the best thesis submitted by members of the Senior Law class a prize consisting of a complete set of their famous American and English Encyclopaedia of Law. This set consists of thirty-one volumes, and is valued at \$100.

ADVANTAGES.

The advantages now offered by the University of Missouri for instruction in the science and practice of common law and equity, as prevailing in the United States, have been greatly increased within the last few years.

Accommodations:

Since the destruction of the main building of the University by fire, January 9, 1892, the Curators have erected a large, commodious structure

for the use of the Law department. It contains a spacious library room, two large lecture rooms, moot-court and clubroom, quiz rooms, and offices for the Professors.

Libraries:

The library of the Law department consists at present of a large collection of reports, and treatises on every subject of the law. It is increasing every year, the Thirty-Eighth General Assembly of the State having in 1895 appropriated five thousand dollars to that end, which has been expended in the purchase of treatises and reports. Since that date it has been increased annually by the Curators from University funds. All the decisions of the American courts are received as soon as published. A complete set of digests of decisions and reports is kept up, so that the latest expressions of authority are brought within reach of the students and Professors. Members of the Law department have access to the general library of the University.

Academic Facilities:

The connection of the Law department with the University enables the law student, without additional charge, to take instruction in other Departments of the University, provided it does not interfere with his legal studies. Some members of every class have found it convenient to pursue such studies as Latin, French, Logic, English, Military Science, Political Economy, History, Stenography, Elocution, Etc.

University Societies:

Members of the Law department are eligible to membership in the two literary societies of long standing in the University known as the "Athenæan" and the "Union Literary." They are also eligible to membership in the "Bliss Lyceum," to which members of the Law department alone are admitted.

These societies are nurseries of oratory, debate and parliamentary law.

GENERAL INFORMATION.

The Department of Law is open alike to men and women. Women who do not wish to practice in the courts often find a knowledge of law valuable to them as stenographers in lawyers' offices.

The enrollment of students in the Department for the current year is 106. See Index.

The Law department opens with the other Departments of the University, on the second Tuesday in September, and closes on the first Wednesday in June of each year.

Examinations for admission will be held on the second Tuesday in September, at 9 o'clock a. m.

Examinations for admission may be accorded at other times, upon special request, to suit the convenience of applicants.

TUITION AND CHARGES.

The tuition is \$50 a year, all payable in advance; and is the same for admission to all classes and courses, except to the Graduate class, for which the charge is \$5. The charge for a diploma is \$3, for a certificate, \$2. No other fees or charges are made. Appointees to Cadetships are not exempt from the regular tuition.

Graduates of the Law department of the University of Missouri holding the degree of Bachelor of Laws, are admitted to the Graduate course of the Law department upon a tuition of \$5 a year. A graduate of the University of the State of Missouri, Washington University, Westminster College, Central College, William Jewell College, Drury College, or Missouri Valley College, who has achieved the honor of standing first in order of merit in his class, will be admitted to the undergraduate Law Course free of tuition for one year. The graduate must hold a Bachelor's degree.

For further information and Catalogues, address

ALEXANDER MARTIN, Dean,
Columbia, Mo.

V. Department of Medicine.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

ANDREW WALKER MCALESTER, A. M., M. D., LL. D.,
Dean of the Faculty, and Professor of Surgery and Obstetrics.

WOODSON MOSS, M. D.,
Professor of the Practice of Medicine.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Comparative Medicine.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.

PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.

GEORGE LEFEVRE, B. A., Ph. D.,
Professor of Zoology.

CLARENCE MARTIN JACKSON, M. S., M. D.,
Assistant Professor (in charge) of Anatomy and Histology.

CHARLES WILSON GREENE, Ph. D.,
Professor of Physiology and Pharmacology.

RICHARD B MOORE, B. S.,
Instructor in Chemistry.

WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.

*FELLOWS.

ROBERT LEE REID, M. D.,
Fellow in Materia Medica.

CHARLES PARKHURST, B. S.,
Fellow in Physiology.

MARY I. STEELE, B. S.,
Fellow in Zoology.

*Fellows are elected for one year and are required to teach five or six hours a week.

LECTURERS.

FRANK L. HENDERSON, M. D.,
Lecturer on Ophthalmology.

G. R. HIGHSMITH, B. S., M. D.,
Lecturer on Railroad Surgery.

A. B. MILLER, A. B., M. D.,
Lecturer on Gynecology.

J. E. TEFFT, M. D.,
Lecturer on Genito-Urinary Surgery.

W. A. TICHENOR, M. D.,
Lecturer on Gynecology.

Y. P. ROTHWELL, A. M.,
Lecturer on Medical Gymnastics.

The Medical Department of the University was organized at Columbia, in 1872, and instruction was begun in February, 1873.

This Department is open alike to men and to women.

REQUIRMENTS FOR ADMISSION.

(For the Session of 1900-1901.)

If unknown to the Dean the applicant must present a certificate of good moral standing.

Entrance by Diploma:

The applicant must present a Certificate or Diploma from a literary or scientific College, Normal School, or High School, approved by the University. See pages 26-28.

Entrance by Examination:

(a) *Value of Units:* A unit is defined as a year's work in any one subject with five (5) periods a week in class room or laboratory, each period being about forty (40) minutes. If the applicant passes a satisfactory examination in any one subject, covering one, two, or three years' work, credit will be given for one, two, or three units respectively.

(b) *Units Required for Entrance:* The applicant must pass on twelve (12) units, of which at least one must be made in English and one in Algebra. For the remaining ten (10) units examinations may be taken on subjects chosen from the following list. One or more units may be made in any one subject:

LIST OF SUBJECTS.

English.	Greek.	Zoology.
Algebra.	German.	General Biology.
French.	Physics.	Botany.
Geometry.	Chemistry.	History.
Latin.		

(c) *Conditioned Students*: If the applicant pass on *one* unit of English and *one* unit of Algebra and on eight (8) additional units, he may be conditioned on the remaining two (2) units. The condition, however, must be removed before entrance upon the second year in Medicine.

(d) *Interpretation of One Year's Work*: The nature and content of the work are about what is required in any good High School. Where a text-book is indicated any other text of similar grade may be substituted.

English: *First year*—English Grammar (any text-book of High School grade), and Composition (no text-book). The applicant will be expected to have read at least as much literature as is required in the first year of a good High School—one unit. *Second year*—Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent. The applicant will be expected to have read as much literature as is required in the second year of a good High School—one unit. *Third year*—Hill's Foundations of Rhetoric; Buehler's Practical Exercises; Composition and Literature—one unit.

Algebra: *First year*—Milne's High School Algebra to Quadratics—one unit. *Second year*—Milne's High School Algebra from Quadratics to end—one unit.

Geometry: Phillips and Fisher's Plane Geometry—one unit.

History: *First year*—Myers' General History—one unit. *Second year*—Green's Short History of the English People—one unit.

Latin: *First year*—Collar & Daniell's First Latin Book—one unit. *Second year*—Three Books of Cæsar, with Composition based thereon—one unit. *Third year*—Two additional books of Cæsar and four Orations of Cicero, with Composition based thereon; Grammar—one unit.

Greek: *First year*—White's Greek Book—one unit. *Second year*—Three Books of Xenophon's Anabasis (Harper and Wallace), and Harper and Castle's Greek Prose Composition; Grammar—one unit.

German: *First year*—Harris's German Lessons, Joynes-Melssner's Grammar, Joynes-Melssner's Reader—one unit. *Second year*—Harris's Prose Composition, Syntax, Reading—Komoedie auf der Hochschule, Doktor Wespe, Minna von Barnhelm, or texts of this grade—one unit.

French: *First year*—Conjugation of Verbs, regular and irregular; Rollin's Reader, completed; simple sight-reading as found in *Le Mariage d'Amour*, *L'Abbe Constantin*, or *Madame Therese*—one unit. *Second year*

—Grammar is continued, with rapid reading of texts like Merimee's *Colomba*. A great deal of reading aloud, to make the student pronounce fluently. Translation from English into French—one unit.

Physics: Gage's Introduction to Physical Science, with Laboratory work—one unit.

Chemistry: Shepard's Elements of Chemistry, with Laboratory work—one unit.

General Biology: Boyer, with Laboratory work—one unit.

Botany: Bergen's Elements of Botany, with Laboratory work—one unit.

Zoology: Colton's Zoology, with Laboratory work—one unit.

It is important that such applicants as are able to do so present to the President of the University a certificate from the President of a College or Normal School, or the Principal of a High School or Academy, showing what work they have finished with passing grades.

Students who enter the Academic department and who contemplate taking a Medical degree in the future, may, by suitable selections of subjects in elective work, shorten the course in Medicine by at least one year. For example, the student may elect Physiology or Anatomy, or both, from the first year, for nine (9) hours. Furthermore, the student may give some of his Academic electives to Physics, Chemistry, Histology, or Biology, all of which are required for the Medical degree.

Admission to Advanced Standing:

Every applicant for advanced standing will be required to present credentials from an accredited medical college, showing satisfactory completion of courses equivalent to those already attended by the class to which he seeks admission. Moreover, the usual entrance requirements must be satisfied.

PLAN OF INSTRUCTION.

The curriculum is carefully graded so that the various branches are taken up in their natural order. In the opinion of the Faculty, the student obtains the best results by confining his first two years to purely scientific subjects. The fundamental sciences must be mastered before he can understand the technical and clinical medicine taught in the third and fourth years. In the clinical instruction the underlying principle is the same as that applied in the scientific laboratories. *By the laboratory method the student actually does the work himself; and if the work is not satisfactorily done, he must repeat it until he is proficient.*

Instruction is given by lectures, recitations, clinical teaching, demonstrations, laboratory work, and conferences in which teacher and students discuss informally topics, or themes written by members of the class.

The length of the session (nine months), allows time for thorough work with frequent reviews and examinations. By this method of teaching, it is believed that the process of cramming—a deleterious practice, too prevalent in the general system of medical education—is avoided: and much is done to elevate the standard of medical education.

The students are trained to become perfectly familiar with the use of the microscope and microscopical methods in Histology (normal and pathological), Physiology, and Bacteriology.

With the consent of their Dean, medical students may take, without fee, any work offered in the Academic department and in the Schools of Agriculture and Mechanic Arts; but the total number of hours shall not exceed 18 a week, and such work shall not count toward the degree of M. D., unless it is included in the regular Medical course. Academic students, on the other hand, may take Anatomy, Physiology, Histology, and Hygiene in the Medical course, preparatory to entering on the full Medical course after graduating in Arts or Science.

CLINICAL ADVANTAGES.

By the munificent gift of Wm. L. Parker, this Department is supplied with an excellent Hospital. The Parker Memorial Hospital will be completed by July 1, 1900. It will then be turned over to the University of Missouri, in the words of the donor, "for the benefit of the Medical department." This building is a handsome modern structure, conveniently located on the campus, west of the Agricultural building. It is sufficiently large to accommodate one hundred patients.

In the various clinics, so far as is compatible with the safety of human life, the student himself does the work. He makes his own examinations and observations, studies carefully the progress of the disease, and finally submits a detailed written report of the case to the remainder of the class for discussion. Much stress is laid upon bedside clinics.

The Boone County Infirmary with capacity of 100 is located near Columbia. It furnishes a considerable variety of medical and surgical clinics. Members of the Faculty belong to the consulting staff.

LABORATORIES.

The laboratories, well equipped already, have been further improved this session out of an appropriation of \$15,000, made by the Fortieth General Assembly. Our laboratories of Anatomy, Histology, Pathology, Bac-

teriology, Physiology, Embryology, Neurology, Chemistry, and Physics, are in charge of men who give their whole time to teaching, writing, and research. They are not allowed to practice medicine. This is of immense advantage to our students. For the teaching of some things in Medicine, an active practitioner is demanded, but no man in active practice should be put in charge of one of these laboratories.

Anatomy and Histology.—The Anatomical laboratories are large, well lighted and ventilated. They are thoroughly equipped with tables, lockers, apparatus for injection, etc. Owing to improved methods of preservation, human dissecting material is available, not merely in the winter season, but throughout the entire year.

The Department possesses a museum collection, which though small is efficient for purposes of practical instruction. It consists of a variety of preserved dissections in human anatomy, a collection of foetal and adult skeletons, mounted and unmounted, specimens illustrating comparative anatomy, and a collection of anatomical models prominent among which are a life-size Auxoux Plastic Man, Female Pelvis, etc.

In Osteology, a complete unmounted skeleton is issued to every two students for their use during the course. A deposit is required, which is refunded when the skeleton is returned uninjured.

The Histological laboratory is equipped with new Leitz microscopes, microtomes, paraffin baths, and apparatus, reagents, and material necessary for a thorough study of practical microscopic anatomy. In order to give ample individual instruction in this work, the students are divided into sections of about twenty each.

Pathology and Bacteriology.—The new Pathological laboratory is equipped with tables, cabinets, microscopes, etc. A museum of valuable pathological specimens (the private property of the Professor) is available for purposes of practical illustration. This laboratory is separated in space from that of Bacteriology.

The Bacteriological laboratories are well equipped with microscopes, incubators, a microtome, different sterilization apparatus for low and high pressures, centrifuge, and many other pieces of apparatus necessary for the practical study and investigation of bacteriology and hygiene. The laboratory also possesses a good collection of living bacteriological cultures, which enable the Medical student to see and study those microbes that are of the greatest practical importance.

Physiology.—The Physiological laboratories are supplied with glassware, chemicals, microscopes, a microtome, and a fair equipment of apparatus for graphic and other work, such as induction coils, batteries and keys, rheocord, moist chamber, kymographs, student's drums, pendulum myograph, manometers, Marey's tambours, sphygmograph, cardiograph, steth-

ograph, electric time-markers, rheonome, haemacytometer, haemometer, micrometers, artificial eye, phakoscope, perimeter, stromuhr, oncometer, electrometer, saccharimeter, spectroscope, ureometer, etc.

Embryology. The laboratory of Embryology is well equipped with microscopes, microtomes, incubators, and all the apparatus required for the work in Embryology. An excellent collection of models, charts and preserved specimens, and also a large stereopticon with several hundred views, are available for instruction.

Neurology. The laboratory is well equipped with necessary apparatus, neurological material, and books for this work.

Chemistry.—There are at present in use 4 laboratories, 2 balance rooms, 2 lecture rooms, 2 private laboratories, and 1 preparation room. There are lockers for 250 students and deskroom for 125 working at one time. Accommodation is reserved for 90 Medical students working in Medical, Inorganic and Organic Chemistry, and Qualitative and Urinary analysis, and ample facilities are provided for special work. There are three teachers who give their entire time to teaching Chemistry.

Physics.—The laboratories are large and well equipped with apparatus for carrying on laboratory work, and illustrating the lectures in Physics.

LIBRARY.

The general University Library includes a section devoted entirely to medical books. The principal medical journals are received regularly and placed on file. Moreover each chair has its own special department library of technical works, all of which are accessible to medical students.

COURSE OF INSTRUCTION.

First Year.

First semester :

Anatomy	6
Histology	3
Osteology and Syndesmology...	3
Chemistry	3
Physics	3

Second semester :

Anatomy	6
Histology	3
Materia Medica	3
Chemistry	3
Physics	3

Second Year.

First semester :

Physiology	6
Pathol. Anatomy	3
Anatomy	3
Chemistry	3
Compar. Pathology	3

Second semester :

Physiology	6
Pathol. Anatomy	3
Anatomy	3
Embryology	3
Chemistry	3

Third Year.

First semester :

Practice of Medicine.....	3
Bacteriology	3
Clinical Pathology	3
Principles of Surgery	3
Therapeutics	3

Second semester :

Practice of Medicine.....	3
Bacteriology	3
Hygiene	3
Obstetrics	3
*Diseases of the Eye and Ear..	3

Fourth Year.

First semester:		Second semester:	
Clinical Medicine	3	Clinical Medicine	3
Clinical Surgery	3	Clinical Surgery	3
Obstetrics	3	Gynecology	3
Children's Diseases	3	Electro-Therapeutics	3
*Dermatology	3		

*Diseases of Eye and Ear, and Dermatology will not be taught next year (1900-1901).

The figures indicate the number of hours a week in the lecture room. Two and a half hours in the laboratory are reckoned as only one hour in the lecture room.

WORK BY SUBJECTS.

I. ANATOMY AND HISTOLOGY.

1. Comparative Anatomy of Vertebrates. Lectures and Recitations, *one hour a week, about three months.*

Laboratory. Dissection of the cat. The student prepares for his later work on the human subject (1) by gaining the requisite skill in dissection, and (2) by learning the general structure of the Vertebrate body. *Two periods a week, about three months.*

(First Year.)

Text: Gorham and Tower.

2. Human Anatomy. (a) Osteology and Syndesmology. Recitations and Demonstrations by the students. A skeleton is issued to every two students. *Three hours a week, about one semester.*

(First Year.)

Text: Gray's Anatomy.

- (b) Human Dissection. Muscles, Blood Vessels, Nerves, etc. *Two periods a week, about five months.*

Text: Eckley's Practical Anatomy.

Recitations in review of the work in the dissecting room. *One hour a week, about five months.*

(First Year.)

- (c) Human Dissection, Brain, Sense Organs, Viscera, etc. *Two periods a week, two semesters.*

Texts: Edinger's Central Nervous System, Gray, Eckley.

Recitations, in review of the work in the dissecting room. *One hour a week, two semesters.*

(Second Year.)

- (d) Anatomy of the Viscera, Nervous System, etc. Lectures and Demonstrations. *Three hours a week, about one semester.*

(First Year.)

Text: Gray's Anatomy.

- (e) Topographical and Applied Anatomy. Recitations and Demonstrations. *Three hours a week, about one semester.*

(First Year.)

3. Histology. (a) General and Special. Lectures and Recitations. *One hour a week, two semesters.*

(First Year.)

Text: Piersol's Normal Histology.

- (b) Laboratory, including Histological Technique, in sections of about 20 students each. Each student prepares, stains and mounts permanently at least 50 different specimens of normal tissues and makes drawings of them. *Two periods a week.*
(First Year.)

II. CHEMISTRY.

The instruction in Chemistry is given by means of a course of lectures, recitations, and laboratory work, lasting four semesters, including general descriptive inorganic and organic Chemistry, theoretical and physical Chemistry, toxicological Chemistry, qualitative chemical analysis, physiological Chemistry and urinary analysis, with special reference to the needs of the medical student in medicine, pharmacy, physiology, pathology, hygiene, nutrition, and toxicology as far as time will permit. During the whole course the theoretical conceptions of Chemistry are not neglected and the attempt is made to present the science of Chemistry as a consistent unity. Recitations are regularly held, covering the text and lectures and from time to time written work is or may be required. Generally there are three lectures or recitations a week during the whole course.

The laboratory work is also continuous, the class meeting three times a week. For this work each student is provided with desk room and apparatus of his own. Practical exercises are required in the examination of water, air, general qualitative chemical analysis, the detection of poisons (inorganic and organic), the preparation and testing of inorganic compounds, the preparation of some typical hydrocarbons, alcohols, acids, fats, the estimation of urea and the sugars, the reactions of uric acid, of the principal alkaloids, and other important organic compounds, and incidentally the detection of adulterations.

Texts: Witthaus, The Medical Students Manual of Chemistry; or Bartley's Text-book of Medical and Pharmaceutical Chemistry; or Attfield's Chemistry General, Medical, and Pharmaceutical including the Chemistry of the United States Pharmacopoeia; Hill's Lecture Notes on Qualitative Analysis, and Special Notes of the Instructors.

III. PHYSICS.

1. Lectures and Recitations, W., 9:30; Laboratory, M. F., 9:30 to 12.
Emphasis is given to those facts of Mechanics, Sound, Heat, Light and Electricity, which have special application to Medicine and Surgery.
Text: Daniell's Medical Physics.
(First Year.)
2. The Practical Applications of Electricity to Medicine and Surgery.
Second semester, T. Th. S., at 9:30.
(Fourth Year.)

IV. PHYSIOLOGY.

1. Lectures and Laboratory. *Six times a week throughout the year.*
(Second Year.)

The course in Anatomy, Histology, Physics, and Chemistry given in the first year of Medicine are prerequisites for admission to this course.

The topics considered are:

(a) The Blood, Circulation, Muscle and Nerve, Digestion, Respiration, Excretion, etc. *First semester, six times a week.*

(b) Metabolism, Nutrition, Nervous System, Reproduction. *Second semester, five times a week.*

(c) The Physiological Action of Medicines (Laboratory). *Second semester, once a week.*

Text: Foster's Physiology; Collateral reading—Landolt, Waller, American Text-Book, Neumelster, Bunge, Brunton, etc. Laboratory Manual—Sterling's Practical Physiology.

V. PATHOLOGY, BACTERIOLOGY, AND HYGIENE.

1. Pathology:

- (a) General Pathology. Lectures two hours, laboratory one hour. *First semester.*
(Second Year.)

Lectures and recitations on general questions in Pathology, illustrated by microscopic preparations and microscopic specimens hardened or fresh. Part of the laboratory hours will be devoted to the performance of post-mortems.

- (b) Special Pathology. Lecture one hour, laboratory two hours. *Second semester*
(Second Year.)

Lectures and recitations on the most important pathological changes found in the different organs of the body. The laboratory hours are devoted to the macroscopical and microscopical study of these changes. Part of the laboratory hours will be devoted to the performance of post-mortems.

- (c) Clinical Pathology. Lectures two hours, laboratory one hour. *First semester.*
(Third Year.)

Lectures and recitations on animal parasites and the pathological changes of the liquids and secreta of the body. In the laboratory hours the student is instructed in the microscopic examination of blood, milk, urine, sputum, pus, secreta of nose, mouth and trachea, contents of stomach and intestines, scrapings, etc.

2. Bacteriology:

- (a) Lectures two hours, laboratory one hour. *First semester.*
(Third Year.)

- (b) Lecture one hour, laboratory two hours. *Second semester.*

(Third

The lectures introduce the student into general ques Bacteriology—the nature and development of bacteria, tory of bacteriology, sterilization and disinfection, immu disposition, etc.

In the laboratory hours the students are instructed preparation of culture-media and in the methods of obtain cultures, and in the different staining methods. They stu saprophytic and the most important parasitic bacteria cultures on the different media and the microscopic prepa Special attention is given to all practical points, the b logical diagnosis of cases of infectious diseases, and the b logical examination of water, air, and soil.

3. Hygiene:

Lectures. *Second semester, three hours a week.*

(Third

Lectures with demonstrations on the following subjects

History of Hygiene; hygienic conditions of air and soil special reference to the influence of climate (acclimatization diseases; general hygiene of cities, dwellings, schools, prisons hygiene of skin, dress, nutrition; hygiene of childhood, how etc.; commercial hygiene, i. e., hygiene of workmen, fac mines, etc.; ways in which important diseases, such as M Typhoid, Diphtheria, Tuberculosis, Pneumonia, Influenza, W ing Cough, Small-pox, Measles, Scarlet Fever, Dysentery, C Bubonic Plague, etc., spread, and the means of preventing epidemics; vaccination against Small-pox, Hydrophobia, and diseases; disinfection with special reference to household schools; quarantines; organization of boards of health in dif countries; value of compulsory registration, vital statistics.

If desired, special courses on military hygiene for military will be given.

VI. ZOOLOGY.

1. Comparative Embryology of Vertebrates. This course is design give a general knowledge of Vertebrate Embryology, and to fu an introduction to Obstetrics. In the laboratory the develop of the chick is carefully studied from preparations of entire bryos and from sections representing successive stages thro out the development. These observations are used in the lect as a basis of comparison with the development of higher fo including man. Such questions as ovulation, menstruation, d mination of the age of embryos, relation of the embryo to uterus, and the mechanism of nutrition of the embryo, rec special attention.

Three times a week. Lectures and laboratory work.

(Second Ye

Text: Marshall, Vertebrate Embryology.

2. **Comparative Neurology of Vertebrates.** A course in the study of the central nervous system and terminal sense-organs, open only to those students who have completed undergraduate courses in Comparative Anatomy and Histology of Vertebrates.

Three times a week. Lectures and laboratory work.

(Elective.)

Texts: Edinger, Anatomy of the Central Nervous System; Obersteiner, Central Nervous System.

VII. SURGERY AND OBSTETRICS.

- 1 (a) **Principles of Surgery.** Didactic lectures and recitations, ending with a thorough examination.
 (b) **Operative Surgery.** This course will include (1) Bandaging, Fracture Dressings, etc., (2) Operations on the Cadaver, (3) Operations on the Lower Animals. Attention is paid to details the same as if made on the human subject. In this course the student does the work the same as in other laboratories.
Three hours a week. First semester. (Third Year.)
2. **Clinical Surgery.** This course will be given at the Parker Memorial Hospital and the Boone County Infirmary. *Three hours a week throughout the year. (Fourth Year.)*
3. **Obstetrics. Lectures and Recitations and Clinics.** A set of Auxoux models of the Female Pelvis, Uterus and contents at various periods of gestation, a set of charts, etc., are available for illustration. *Three hours a week, two semesters.*
4. **Gynecology. Lectures and Recitations and Clinics.** *Three hours a week, second semester. (Fourth Year.)*

VIII. MATERIA MEDICA AND THERAPEUTICS.

1. **Materia Medica.** Lectures, recitations and laboratory work. *Three hours a week. Second semester. (First Year.)*
2. **Therapeutics.** Aside from drugs, general therapeutical considerations, such as hydrotherapy, dietetics, etc., receive due attention. Prescription writing becomes a matter of daily drill, and the elegance or incompatibility is tested by actual preparation by the student.
 Sections of the class under charge of the Teacher will visit the Parker Memorial Hospital to familiarize themselves with the technique of the hypodermic syringe, aspirator, canter, stomach tube, stupe, and with various baths and packs.
 The student will closely follow at the bedside the physiological action of drugs, dietetics, nursing, etc., and will report upon the same. *Three hours a week. Second semester. (Third Year.)*

IX. MEDICINE.

1. **Practice of Medicine.** Lectures and recitations and Clinics. *Three hours a week. Second semester. (Third Year.)*
 Text-books: Anders & Osler.

2. Clinical Medicine. *Three hours a week, second semester.*

(Fourth Year.)

Students in this year are required to make written reports of cases in their charge, and to write articles upon subjects assigned. These reports and articles are discussed by the class and the Professor. Monographs and prize essays upon important subjects, by eminent authors, are reviewed before the class, and the students are required to make digests. This Chair possesses a choice, carefully selected library, to which the students have access.

3. Children's Diseases. *Three hours a week. First semester.*

With special reference to hygiene and nutrition of the child as a prophylaxis.

(Fourth Year.)

X. COMPARATIVE MEDICINE.

This course treats of diseases common to men and animals. The method of teaching is by lectures, demonstrations, and laboratory work. Available for this course are the apparatus and collections contained in the Laboratory of Physiology and in a well equipped laboratory of Veterinary Science.

(Second Year.)

XI. SPECIAL COURSES.

1. Diseases of the Eye and Ear. *Three hours a week. Second semester.*
(Third Year, Elective.)

2. Dermatology. *Three hours a week. First semester.*

(Fourth Year, Elective.)

3. Life Insurance Examination. Open to Third and Fourth Year students. The course consist of practice in examining for life insurance, and prepares the student for office work in this line.

(Elective.)

4. Medical Gymnastics, Massage, Passive and Active Exercise. The prescription exercise to correct deformities in growing children and the use of manipulation and movement in preserving and restoring health. Especial attention is given to Swedish Gymnastics as developed by Ling and his successors. *One hour a week throughout the year.*

(Elective.)

DEGREES.

Upon a satisfactory completion of the above course, the degree of Doctor of Medicine will be conferred. The degree of "M. D. cum laude" is given to all graduates in the Medical course who have the Academic degree of A. B., or B. S.

REQUIREMENTS FOR GRADUATION.

1. The candidate must have completed the course prescribed and passed satisfactory examinations thereon.

2. He must be twenty-one years of age, and must exhibit evidence satisfactory to the Faculty of possessing a good moral character.

3. His last course of lectures must have been attended in this Department.

4. He must have been regular in attendance upon lectures and recitations and laboratory exercises. Indeed, regular attendance is required of all students.

SCHOLARSHIP.

The Rollins Scholarship in the College of Medicine is a prize of fifty dollars which is awarded to that member of the Junior (Third Year) class who has made the best record during the course.

FEES AND EXPENSES.

On and after 1 September, 1900, tuition in Medicine at the University of Missouri, throughout the four years' course, will be *free*. The only charges will be a library fee of \$5.00 for each year, and laboratory deposits covering the cost of materials actually used by the student.

Free tuition, the small cost of living at Columbia, the opportunities for earning a part of one's living expenses, and good instruction, place education in Medicine within the reach of every ambitious student. The expenses of a student for room, board, books, and fees need not exceed \$120 a session. The fees charged in some schools will bear all expenses here. Room rent, table board, fuel and lights cost from \$2.00 to \$4.50 a week. In the clubhouses of the University the cost does not exceed \$2.00 a week.

For further information, address the Dean,

A. W. McALESTER, M. D.,

For Catalogue, address

Columbia, Missouri.

IRVIN SWITZLER,

Registrar.

VI. Department of Military Science and Tactics.

*ABRAHAM PERRY BUFFINGTON, Captain U. S. Infantry,
Professor of Military Science and Tactics, and Commandant of Cadets.
WILLIAM HENRY TURNER, B. S.,
*Instructor in Military Science and Tactics, and Acting Commandant
of Cadets.*

Requirements for Admission:

No cadet will be received who is less than five feet, one inch in height, or who is any way physically disqualified for military service, or who has not been duly matriculated in some other department of the University.

All male students of the University not physically disqualified, will be allowed to enroll themselves as voluntary cadets. Volunteers can buy a complete uniform for about \$12.50. A copy of the regulations for the government of the cadets is given to each cadet upon his entrance into the Missouri State Military School. These regulations require cadets to enter and report to the Commandant for duty before September 25 of each year. They should report by September 12, if possible. Vacancies may be filled at the discretion of the Senators and Representatives.

Battalion Staff and Non-commissioned Staff.

Cadet Officers:

Cadet Major and Acting Commandant.....	W. H. Turner
Cadet Major	W. H. Seward
Cadet First Lieutenant and Adjutant.....	G. Barlow
Cadet First Lieutenant and Quartermaster.....	W. C. Barnhardt
Cadet Second Lieutenant	H. H. Thurston
Cadet Sergeant Major	T. P. Howard
Cadet Quartermaster Sergeant.....	E. D. Smith

Company A.

Cadet Captain	C. B. Rußner
Cadet First Lieutenant	A. Bassett
Cadet Second Lieutenant	E. C. Paper
Cadet First Sergeant	A. Jennings

Company B.

Cadet Captain	C. L. Parkhurst
Cadet First Lieutenant	E. F. Camron
Cadet Second Lieutenant	J. L. Delster
Cadet First Sergeant	F. S. Lyman

*Absent during session of 1899-1900.

Company C.

Cadet Captain	J. L. Anderson
Cadet First Lieutenant	Wm F. Switsler, Jr.
Cadet Second Lieutenant	P. A. Blackwell
Cadet First Sergeant	G. W. Hann

Company D.

Cadet Captain	L. Utley
Cadet First Lieutenant	W. Halliburton
Cadet Second Lieutenant	M. Arnold
Cadet First Sergeant	F. C. Schaefer

Artillery.

Cadet Captain	J. N. Wilson
Cadet First Lieutenant	J. S. Maddox
Cadet Second Lieutenant	E. L. Shepard
Cadet First Sergeant	J. C. Hall

Band.

Chief Musician	F. Pannell (civilian)
Drum Major	S. Kroesch
Chief Trumpeter	F. Mullinix

Those cadets are appointed to office who show ready obedience, zeal, and capacity in the discharge of military duty. The Governor of Missouri issues commissions to those entitled by their battalion rank to receive them.

Equipment and Supplies:

Two hundred and ten Springfield cadet rifles of the latest model; one Gatling gun, cal. 45, with full equipment; two 3-inch rifled field guns, with carriages and implements; twenty-five sabres; and a suitable amount of ammunition and target materials, are furnished by the United States. The State supplies ammunition, camp equipage, utensils, etc. The University supplies instruments and instruction for the band.

Prizes:

The Curators have provided an elegant silver cup to be awarded each year to the best drilled company.

A gold medal is usually given to the best drilled private, and a target medal to the best marksman.

Uniforms:

Cadets wear but one style of uniform, known as the undress or fatigue uniform. Uniforms must be worn at all military exercises, and

tailor made uniforms are supplied to volunteer cadets at a contract price. The State usually furnishes uniforms to regularly appointed cadets free of cost (one entire uniform every year to each appointed cadet, depending upon amount of appropriation by Legislature).

Owing to the large enrollment during the session of 1899-1900, cadets (if more than one hundred are enrolled) will have to pay in the session of 1900-1901 for part of their uniforms. The remainder of the appropriation will be divided equally among the appointed cadets. Every cadet must be supplied with a uniform.

COURSE OF INSTRUCTION.

FIRST YEAR.

First year cadets are instructed by the several captains.

Practical instruction in the Schools of the Soldier, Company, and Battalion (Infantry), and Extended Order.

Practical instruction in rifle-firing, 100, 200, 300, 400, and 500 yards.

Practical instruction in duties of camp, embracing guard duty, etc.

Recitations in Infantry Drill Regulations through School of the Company, ceremonies of guard mounting, dress parade, inspection, muster and extended order.

Recitations in guard duty and cadet regulations.

Recitations in artillery tactics, sabre drill, etc.

SECOND YEAR.

Second year cadets are instructed by the Commandant.

Practical instruction in the Schools of the Company and Battalion and in Extended Order.

Practical instruction in the service of field-guns (foot battery), mechanical maneuvers.

Practical instruction in rifle-firing, 100, 200, 300, 400, and 500 yards.

Practical instruction in the duties of camp, embracing guard duty, etc.

Practical instruction in military signaling.

Recitations in Infantry Drill Regulations, School of the Battalion.

Recitations in Artillery Tactics, manual of the piece dismounted, etc.

Recitations in Military Science:

Lectures are given by the Commandant on Army Organization, Army of the United States, Army Regulations, Courts Martial and Military Law, the Customs of War, Security and Information (including outpost, advance and rear guards, patrols, reconnaissances, orientation and marching), Guard Duty, Castrametation, Field Service, Field Fortification, Rifle Firing, and Target Practice.

Recitations are held during the winter months, when the weather is unfit for drill. All cadets not included in the two preceding classes are required to take a short review of the previous work.

Certificate of Proficiency:

To have passed through the entire course does not entitle a cadet to receive a certificate of proficiency in Military Science and Tactics, but it is the rule now adopted in the University that the certificate will be issued to every cadet, State or volunteer, who takes the entire course and attains a grade of at least 70 per cent in every examination given during the two years in Military Science and Tactics.

Appointment of State Cadets:

The following extracts from the Revised Statutes, 1899, of the State of Missouri (sections 10561-6 inclusive), will be of interest to those who desire to receive appointments as cadets:

"The Military Department of of the University of the State of Missouri as organized under section 1225, Revised Statutes of the United States, and section 10507, Revised Statutes of Missouri, 1899, is created the Missouri State Military School.

"The corps of cadets of the Missouri State Military School shall consist of appointees of Senators and Representatives, and such students as may voluntarily enter such school. All appointments under this section shall be for the term of two years. Each Senator and Representative of the General Assembly of Missouri shall have the power to appoint a cadet from his district by the first day of August of each year: Provided, that if there shall be no application for such cadetship in any district by the first day of August, in any such year, then such appointment may be made from any other district in this State; and, provided, that in case of death, resignation or expulsion from the University of any cadet from such district, the Senator or Representative thereof may fill such vacancy at any time. All appointees under this section shall pass the required examination for admission to the University.

"Cadets receiving instructions, as provided in preceding section, shall be matriculated in all Academic departments, and in the College of Agriculture and Mechanic Arts of the University, free from tuition and other fees.

"The corps of cadets, as provided in the preceding sections, shall have the military organization prescribed for the National Guard of the State and be reckoned a part thereof, and as such entitled to all such provisions as are or may hereafter be made for the National Guard of Missouri.

"The military government and discipline of the cadets shall be ~~pre~~scribed by regulations prepared by the Faculty of the University and ~~ap~~proved by the Governor of the State. The officers of the corps of ~~cadets~~ shall be appointed and commissioned by the Governor of the State, upon the recommendation of the Faculty of the University, and shall have the ~~power~~ conferred by said regulations.

"Cadets shall be individually responsible for all State property ~~issued~~ directly to them, and shall constitute a guard for the safe-keeping and ~~pres~~ervation of all University property."

Regulations:

Cadet regulations prescribe that military drills, etc., shall be held at least three hours a week, one of which shall be for theoretical and two ~~for~~ practical instruction. The regulations require, also, whenever the ~~means~~ of the University permit it, an annual encampment of from eight to ~~ten~~ days, during which the instruction is entirely military and practical. Here the cadets are instructed in all the duties of camp life. They conduct their own commissary and quartermaster departments. They have target practice at 100, 200, 300, and 400 yards, perform the duties of sentinels, patrols, etc., and are given all the drills and ceremonies prescribed by the two years' course. The expenses of the encampment are borne by the University. A copy of the regulations may be secured at the Commandant's office. Every cadet must strictly conform to these rules.

Enrollment:

During the present session 289 cadets have received instruction in Military Science and Tactics.

State Commissions:

Senate Bill No. 66, 39th General Assembly, provides as follows :

"Article III. Section 33. Every graduate of any college in the State of Missouri, in which military instruction is regularly given by an officer of the United States Army, detailed for that purpose, who shall have received military instruction during a course of four years, shall be entitled to a commission as brevet second lieutenant of the National Guards of Missouri, subject to such physical examination as to ability as the commander-in-chief may from time to time prescribe: Provided that application for such commission be made within one year after graduation from such college, and that such applicant shall be at the time a citizen of the State of Missouri."

VII. College of Agriculture and Mechanic Arts.

FAULTY.

Except those of the President and the Dean, names are printed in order of appointment.

RICHARD HENRY JESSE, LL. D.,
President.

HENRY JACKSON WATERS, B. S. A.,
Dean of Faculty, and Director of the Experiment Station.

PAUL SCHWEITZER, Ph. D., LL. D.,
Professor of Agricultural Chemistry, and Chemist to the Experiment Station.

EDWARD ARCHIBALD ALLEN, Litt. D.,
Professor of English Language and Literature.

HENRY CAPLES PENN, A. M.,
Assistant Professor of English Language and Literature.

MILLARD LEWIS LIPSCOMB, A. M.,
Professor of Physics.

Professor of Astronomy, and Director of the Observatory.

CHRISTIAN WILLIAM MARX, B. E.,
Professor of Mechanical Engineering, and Superintendent of Mechanic Arts.

JOHN WALDO CONNAWAY, M. D. C., M. D.,
Professor of Veterinary Surgery.

FREDERICK CHARLES HICKS, B. A., Ph. D.,
Professor of Economics.

HARRY THOMAS CORY, M. M. E., M. C. E.,
Professor of Civil Engineering.

LUTHER MARION DEFOE, A. B.,
Assistant Professor of Mathematics.

JOHN CHARLES WHITTEN, B. S., M. S.,
Professor of Horticulture, and Horticulturist to the Experiment Station.

SIDNEY CALVERT, B. Sc., A. M.,
Assistant Professor of Chemistry.

***ISIDOR LOEB, M. S., LL. B.,**
Professor of History.

BENJAMIN FRANKLIN HOFFMAN, M. L.,
Professor of Germanic Languages.

*Absent during the session of 1899-1900.

- FREDERICK BLACKMAR MUMFORD, M. S.,
Professor of Agriculture, and Curator of the Agricultural Museum
- HENRY MARVIN BELDEN, B. A., Ph. D.,
Assistant Professor of English Language and Literature.
- JOHN MOORE STEDMAN, B. Sc.,
Professor of Entomology, and Entomologist to the Experiment Station.
- RAYMOND WEEKS, A. M., Ph. D.,
Professor of Romance Languages.
- WILLIAM GEORGE BROWN, B. S., Ph. D.,
Professor of Chemistry.
- HOWARD BURTON SHAW, B. C. E., A. M.,
Professor of Electrical Engineering.
- *CURTIS FLETCHER MARBUT, B. S., A. M.,
Professor of Geology and Mineralogy.
- *ABRAHAM PERRY BUFFINGTON (Captain U. S. Army),
Professor of Military Science and Tactics.
- JOHN NELSON FELLOWS, A. M.,
Professor of Mathematics.
- PAUL KAUFMANN, M. D.,
Professor of Pathology and Bacteriology.
- THOMAS NOLAN, B. S., Ph. B., M. S.,
Professor of Architecture.
- GEORGE LEFEVRE, A. B., Ph. D.,
Professor of Zoology.
- EUGENE MORROW VIOLETTE, A. B., A. M.,
Acting Assistant Professor of History.
- ARTHUR GRAY LEONARD, A. B., A. M., Ph. D.,
Acting Assistant Professor of Geology and Mineralogy.
- WILLIAM WALTER GRIFFITH, B. S.,
Instructor in Physics.
- RICHARD B. MOORE, B. S.,
Instructor in Chemistry.
- THOMAS JACOB RODHOUSE, B. S.,
Instructor in Drawing.
- MARY ESTELLE PORTER, B. L.,
Instructor in Commercial Studies.
- GEORGE ANDREW IRVINE, B. S.,
Instructor in Mechanic Arts.
- CHARLES THOM, A. M., Ph. D.,
Instructor (in charge) in Botany.
- WILLIAM HENRY TURNER, B. S.,
Instructor in Military Science and Tactics, and Acting Commandant of Cadets.

*Absent during the session of 1899-1900.

† A. E. HACKETT,
Lecturer on Oulmatology.

HON. N. F. MURRAY,
President of the State Horticultural Society, Non-resident Lecturer on Horticulture.

HON. L. A. GOODMAN,
Secretary of the State Horticultural Society, Non-resident Lecturer on Horticulture.

*D. F. LUCKY, D. V. S.,
State Veterinarian, Non-resident Lecturer on Veterinary Surgery.

M. MORTENSEN,
Non-resident Lecturer on Dairying.

*In the service of the State Board of Agriculture.

†In the service of the U. S. Government.

Historical Statement:

This College had its origin in the beneficence of National, State, and local governments. Its location, objects, and aims are defined in the following extracts from the acts of Congress and the laws of the State of Missouri:

"Its leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to Agriculture and the Mechanic Arts, in such manner as the legislatures of the States may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life." (Act of Congress, 1862, Sec. 4.)

"There is hereby established the Agricultural and Mechanical College, and a School of Mines and Metallurgy, provided for by the grant of the Congress of the United States, as a distinct Department of the University of the State of Missouri." (R. S. of Missouri, Sec. 8738.)

"To effect the said leading objects of the College, as herein established, it is provided that the students and members thereof shall be admitted to the libraries, museums, models, cabinets, and apparatus, and to all lectures and instruction of the University which now exist or may hereafter exist, and to all other rights and privileges thereof, in a manner as full and ample as the students of any other Department in said University; and to provide for instruction in military tactics, as herein required, it is enacted that in case a system of military education shall be established by Congress, the State University is hereby required by law to make the

necessary provision for carrying out the plan so established in connection with the institution." (R. S. of Missouri, Sec. 8741, p. 2017.)

"The Agricultural and Mechanical College, and the School of Mines and Metallurgy herein provided for, shall have each a separate and distinct Faculty, whose officers and professors may be the same in whole or in part as the officers and professors in other Colleges and Departments of the University." (R. S. of Missouri, Sec. 8742.)

"In consideration of the permanent location of the Agricultural and Mechanical College in connection with the State University the county of Boone shall donate not less than \$80,000 in cash, to be used in erecting such buildings and making such improvements as may be needed for such College, and also for a Mechanical College in connection with the State University, and that the same shall be held for the uses and purposes of said Agricultural and Mechanical College." (R. S. Missouri, Sec. 8744.)

In accordance with the above provisions, the citizens of Boone county made a donation of \$90,000 for the erection of a building and the purchase of lands for an experimental farm and this College was permanently located at Columbia as a Department of the University, and the School of Mines and Metallurgy was located at Rolla, in Phelps county. The latter is under the same general control as the College of Agriculture and Mechanic Arts.

Endowment of the College:

1. The proceeds of the sales of public lands donated to Missouri by the act of Congress of July 2, 1862. The State received as her share two hundred and seventy-five thousand acres, of which there have been sold up to date two hundred and thirty thousand nine hundred and three acres, yielding three hundred and fifty thousand dollars. This sum is invested in State certificates of indebtedness, at 5 per cent. and yields seventeen thousand five hundred dollars. Of this amount one-fourth is by law appropriated to the support of the School of Mines and Metallurgy, at Rolla.
2. The Act of Congress of March 2, 1887, known as the "Hatch Bill," which appropriates \$15,000 annually to the College of Agriculture for the maintenance of an Experiment Station. The object of this Station is to conduct experiments in various lines of work connected with Agriculture. By the act of Congress making the above appropriations, the expenditures are expressly restricted for the purpose of original scientific investigation in Agriculture.
3. The annual appropriations under the act of Congress of August 30, 1890 (Morrill bill). The first appropriation of \$15,000, for the years of 1889-90, is increased each year \$1,000, and this is to continue until it reaches \$25,000, which shall remain an annual appropriation. Of this amount about one-sixteenth is by law appropriated to the "Lincoln Institute," at Jefferson City, for the education of negro children in Agriculture and Mechanic Arts, and one-fourth of the remainder is by order of the Board of Curators given to the School of Mines and Metallurgy, at Rolla.

4. The College Farm, which cost originally \$60,000.

The above sums, together with the assistance derived from the association of the College of Agriculture with the University, furnish an abundant income for all purposes of instruction and scientific investigation.

The College is divided into four schools, with a fifth division, the Experiment Station, as follows:

- A.—The School of Agriculture.
- B.—The Experiment Station.
- C.—The School of Mechanic Arts.
- D.—The School of Engineering.
- E.—The School of Architecture.

A. SCHOOL OF AGRICULTURE.

Requirements for Admission:

1. Requirements for the fall of 1900. Applicants for admission to the Agricultural course must give satisfactory evidence that they have completed the work represented by three units. These units shall consist of Algebra, 1 unit, English, 1 unit, and one unit to be selected from the following group:

English.	Chemistry.	French.
Mathematics.	Physics.	German.
History.	Biology (Botany or Zoology).	Latin.

A unit is a year's successful work in a good High School.

2. Requirements for the fall of 1901. In the fall of 1901, 6 units will be required for admission, and the Agricultural course will then be made a four years' course. The six units required will be Mathematics 2 units, English 2 units, and two to be selected from any of the subjects enumerated in the the preceding paragraph.

In English, in 1900, the candidate will be examined on English Grammar (any text-book of High School grade), and Composition. He will be expected to have read at least as much literature as is read in the first year of a good High School (1 unit). In 1901, in addition to the one unit just described, he will be examined on Southworth and Goddard's Grammar and Composition (adopted for the High Schools of the State), or the equivalent, and will be expected to have read at least as much literature as is required in the second year of a good High School (1 unit).

Algebra: *First unit.*—Milne's High School Algebra to Quadratics—*Second unit.*—Milne's High School Algebra from Quadratics to end. Instead of a unit in Algebra, we will accept:

Geometry: Phillips and Fisher's Plane Geometry—one unit.

Applicants for admission to advanced classes must furthermore pass examinations in all the studies previously pursued by the class which they propose to enter. If they have pursued such studies in any of the High Schools of the State approved by the Faculty, or in any other institutions of similar rank, they may receive credit therefor upon presenting to the "Committee on Entrance by Diploma" a certificate from the proper officers of such institutions.

For the dates of examination for admission, see the calendar, p. iii and page 24. For board and other expenses, see page 43.

COURSES OF INSTRUCTION.

I. A TWELVE WEEKS' WINTER COURSE IN AGRICULTURE AND DAIRYING (See Special Circular.)

This course is designed to meet the wants of a large number of young men who can not afford the time or the money necessary for a regular college course in agriculture, and yet desire a better preparation for their life work than can be acquired on the farm.

To suit the convenience of farmers the course is given in the winter. It is open to all over sixteen years of age, and no entrance examination or special preparation is required. Any intelligent person with a common school education will be able to pursue this course with profit. An entrance fee of \$5 covers all college expenses.

It is the aim to give the student the largest amount of thoroughly practical information about farming, dairying, gardening, fruit-growing, veterinary science, carpentry, and blacksmithing, possible in twelve weeks, and, at the same time, instruct him in the elements of chemistry, geology, entomology, and botany as applied to agriculture and horticulture.

The instruction is imparted by means of lectures, and practical illustrations on the farm, in the barn, in the greenhouse, the laboratories, and the machine shops of the College.

The course consists of 254 lectures and exercises, divided as follows: Agriculture, 100; Horticulture, 40; Dairying, 20; Agricultural Chemistry, 30; Economic Entomology, 10; Veterinary Science, 24; Carpentry and Blacksmithing, ten exercises of two and one-half hours each; Book-keeping and Farm Accounts, six exercises of two and one-half hours each; Butter and Cheese-making, 14 exercises of two and one-half hours each.

II. SHORT WINTER COURSE IN HORTICULTURE.

With a view to aiding in the development of the Horticultural interests of the State by the dissemination of correct information concerning

the best modern methods in the management of nurseries and orchards and in the growing of small fruits, flowers, and vegetables on a commercial scale, and by instruction in the application of the sciences underlying these arts, a short winter course in Horticulture, parallel with the short course in Agriculture, is offered. This course is open to all persons over sixteen years of age, and no entrance examination is required. An entrance fee of \$5 covers all college charges.

The course consists of 267 lectures and exercises, as follows: Horticulture, 108 (including Nursery Work, 24 lectures and 12 afternoons at practice in the nursery and grafting shops; Orchardling and Small Fruit Growing, 24 lectures and 12 afternoons in the orchards and vineyards; Market Gardening, 24 lectures and 12 afternoons spent in propagating vegetables, etc.); Landscape Gardening, 10 lectures; Fungous Diseases and Fungicides, 20 lectures; Entomology, 60 lectures; Botany, 16 lectures; Manures, 10 lectures; Drainage, 5 lectures; Sanitary Science, 10 lectures; Book-keeping, 6 exercises of two and one-half hours each; Carpentry and Blacksmithing, 18 exercises of two and one-half hours each; Steam Heating and Steam Fitting, 4 lectures.

The special lecturers in this course were Hon. N. F. Murray, President State Horticultural Society, Oregon, Mo., 24 lectures and 24 practical exercises on Nursery Work; Hon. L. A. Goodman, Secretary State Horticultural Society, Westport, Missouri, 24 lectures and 24 practical exercises on Orchardling and Small Fruit Growing.

These short winter courses, beginning Tuesday, January 1, 1901, will be continued daily, except Sunday, until March 25, 1901. Full details will be given in a special circular, which will be ready for distribution in September, 1900, and will be sent free to all applicants.

III. A TWO YEARS' COURSE.

The course embraces the first two years of the regular Five Years' Course and it aims to give the student the most comprehensive knowledge of the laws underlying the best modern practice in Agriculture, Horticulture, etc., as well as to develop the highest skill in Mechanical Drawing, Carpentry, and Blacksmithing, that is possible in that time.

In addition to the mental discipline afforded by a study of these useful arts and sciences, the student is instructed in English, Mathematics, etc., with a view to broadening his mind and better fitting him for his duties as a citizen.

It is the purpose of the course to educate the student back to the farm instead of away from it, and to give him such knowledge as will be most useful in the practice of his profession.

The requirements for admission are the same as for the Five Years Course.

Students completing this course will be granted a certificate.

IV. A FIVE YEARS' COURSE.

This course, a continuation of the Two Years' Course, is more scientific, but not less practical.

It has been recast in order to adapt it as far as possible to present requirements in both science and practice. Its object is to give young men a thorough education at the same time that they are carefully instructed in the relations that the sciences bear to the various branches of agriculture; to give the mental training that is indispensable to success and to the discharge of the highest duties of citizenship; and also the scientific and technical training and knowledge requisite for becoming efficient workers in agricultural affairs, whether as practical farmers, teachers, or investigators. It aims to impart a thorough and comprehensive knowledge of the principles underlying the business of farming according to modern methods. Practice is combined with theory, whenever it is necessary for the demonstration of a principle or involves skilled labor, but the student's time is not consumed in merely manual operations. Increased teaching force and equipment have been provided for the work, and the opportunities offered young men were never so satisfactory as at the present time.

Students completing this course will be entitled to a diploma, conferring upon them the degree of Bachelor of Science in Agriculture (B. S.).

Elective Works: On reaching the third year, students may elect work as provided in the scheme of studies in any of the following subjects: Agriculture, Horticulture, Entomology, Veterinary Science, Agricultural Chemistry, Dairying, Botany, Zoology, Chemistry, English, French, and German.

Thesis: As a requisite for graduation, each candidate must present an acceptable thesis, based on the results of original research. The subject must be announced to the Dean with the approval of the head of the department within which it lies not later than the beginning of the second semester of the Senior year. The completed thesis must be submitted not later than the second Saturday before Commencement day.

SCHEME OF STUDIES.

First Year.

First Semester.		Second Semester.	
8:30	Mathematics, M. W. F..... 3	8:30	Mathematics, M. T. W.
9:30	English, T. Th. S..... 3	Th. F. S. 6	
9:30	to 12:00. Shopwork, M.	9:30	English, T. Th. S..... 3
	W. F. 3	9:30	to 12:00. Shopwork, M.
10:30	Agriculture, T. Th. S..... 3		W. F. 3
1:30	to 4:00. Physics, M. W.	10:30	Agriculture, T. Th. S..... 3
	F. 3	1:30	to 4:00. Physics, M. W.
1:30	to 4:00. Commercial, T.		F. 3
	Th. S..... 3		

Second Year.

First Semester.		Second Semester.	
8:30	English, T. Th. S..... 3	8:30	Horticulture, M. W. F.... 3
10:30	Agriculture, M. W. F.... 3	8:30	English, T. Th. S..... 3
11:30	Mathematics, M. T. W.	11:30	Mathematics, M. T. W.
	Th. F. S. 6		Th. F. S. 6
1:30	to 4:00. Chemistry, M.	1:30	to 4:00. Chemistry, M.
	W. F. 3		W. F. 3
1:30	to 4:00. Drawing, T. Th.	1:30	to 4:00. Drawing, T. Th.
	S. 3		S. 3

Third Year.

First Semester.		Second Semester.	
8:30.	Horticulture, M. W. F... 3	8:30.	Forestry, T. Th. 2
9:30.	Agricultural Chemistry,	9:30.	Agricultural Chemistry,
	T. Th. S. 3		T. Th. S. 3
1:30	to 4:00. Vegetable Phys-	9:30	to 12:00. Vegetable Phys-
	iology, M. W. F..... 3		iology, M. W. F..... 3
1:30	to 4:00. Physics, T. Th.	10:30.	Systematic Botany, T. Th.
	S. 3		S. 3
	Elective .. . 3	11:30.	Entomology, T. Th. S.... 3
		1:30	to 4:00. Animal Physiol-
			ogy, M. W. F..... 3

Fourth Year.

First Semester.		Second Semester.	
8:30.	Veterinary Science, M.	8:30.	Veterinary Science, M.
	W. F. 3		W. F. 3
8:30.	Climatology, T. 1	9:30	Landscape Gardening, M. W. 2
9:30	to 12:00. Bacteriology, M.	9:30	Agriculture, T. Th. S.... 3
	W. F. 3	10:30	Geology, T. Th. S..... 3
9:30	Agriculture, T. Th. S. 3	3:00.	Economics, T. Th. S..... 3
11:30.	Economics, T. Th. S..... 3		Elective .. . 3
1:30	to 4:00. Veterinary Clin-		
	ics, S. 1		
	Elective .. . 3		

—

—

2a. Animal Husbandry. *First semester, M. W. F., at 8:30.* Professor MUMFORD. (Second Year.)

This work begins with a careful study of the types of domestic animals. The score card is the basis in judging beef and dairy cattle, draft and light horses, mutton and wool sheep, swine and poultry. After the student has become familiar with the most approved types, he studies the principles and methods of successful breeding, such as heredity, atavism, variation, selection, fecundity, influence of environment, in-breeding, cross-breeding, grading influence of a previous impregnation, etc.

3a. Agricultural Engineering. *First semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

Construction of barns, stables, and other shelters; plans for building silos, fences, etc. Road building is considered with special reference to country roads. Some attention is given to the mechanics of farm implements and machines. For this purpose a new self-registering dynamometer has been provided. There is also a model of a horse arranged for determining by experiments the influence on draft of direction of traces, weight of horse, strength of hock muscles, etc.; and also an appliance for measuring the resistance to tractive force of incline and obstruction.

3b. Stock Breeding. *Second semester, T. Th. S., at 8:30.* Professor MUMFORD. (Fourth Year.)

The laws of animal nutrition; composition of the animal body; fodders, the source of nutrients; digestion, resorption, circulation; respiration and excretion; formation of muscle, flesh, and fat; composition and digestibility as determining the value of feeding stuffs; their preparation and use; feeding for fat, for milk, for wool, for work, and for growth. A portion of the time is devoted to practicums, in which the student is required to compound rations and feed them, carefully recording results.

4b. Agriculture. *Second semester, Dean WATERS.*

(Short Winter Course.)

Fifty lectures on manures and their application; on stock feeding; composition and digestibility of fodders; steaming, cooking, and grinding foods; and feeding for growth, fat, milk, wool, or labor. (See special circular of Short Winter Course.)

5b. Agriculture. *Second semester.* Professor MUMFORD.

(Short Winter Course.)

Sixty lectures on farm equipment; the properties and uses of construction materials; building barns, stables, shelters, silos, and other farm structures; farm crops, tillage, rotation, cultivation, harvesting and storing; breeds and breeding; stock judging; scoring animals to determine best types for beef, milk, mutton, wool, etc. This work is all performed at the farm barns, and students acquire considerable proficiency in judging stock. (See special circular of Short Winter Course.)

8b. Dairying. Second semester. Mr. MORTENSEN.

(Short Winter Course.)

Selection, breeding, and feeding of dairy cows; modern methods of butter and cheese-making. Fifty hours of practical work in the dairy building are devoted to separating and testing milk, ripening cream, churning, working, salting, coloring, judging and packing butter for market. (See special circular of Short Winter Course.)

7a. Judging Live Stock. First semester. Professor MUMFORD.

(Elective.)

Advanced work with the score card, and a study of breed characteristics. The college farm, well equipped with typical specimens of the leading breeds of live stock, offers excellent opportunities for this work.

8b. Soils. Second semester. Professor MUMFORD.

(Elective.)

Laboratory work in Soil Physics, chiefly the Mechanical Analysis of soils. Offered only to Juniors and Seniors.

9b. Experiments in Agriculture. Second semester. Professor MUMFORD.

(Elective.)

The work consists of lectures on methods of Experiment Station work and critical studies of bulletins. The student is required to make abstracts of a sufficient number of bulletins, bearing on a selected line of work, to become familiar with their scope and aim. He is also required to plan and conduct an original experiment.

10b. Dair

eq

de

eq

Course

Course

Course

Course.

Facilitie

Libra

volumes a

library is

in the Uni

ing agricu

library of

cents in a

The

furnishing

cultural M

illustratin

of cotton fibers and of fiber plants from various countries; and a systematic collection of the agricultural grasses of the United States. The forest woods of the State are represented by block specimens showing transverse sections and bark characteristics, and by a collection of polished boards. Several hundred models of early patents of farm machines occupy a considerable portion of the museum. In live stock there are skeletons of a horse, and hog, and two stuffed specimens of the wild white cattle of Great Britain.

The Farm.—The farm is fully equipped with improved agricultural machinery, a dairy building, hay and stock scales, a silo, sheep, cattle, and horse barns, and model swine pens. The farm and its equipment is used primarily for the instruction of students.

The Live Stock.—For the instruction of students in animal husbandry, the farm maintains typical specimens of the leading breeds of live stock. Among the breeds of cattle are a fine herd of Jerseys, and excellent specimens of Short-horns, Aberdeen Angus, and Herefords. A herd of grade steers are fattened each season. There are specimens of the leading breeds of sheep and swine, together with grade animals.

The Dairy.—The college has equipped a dairy with several Babcock milk testers, aerators, improved milk and cream vats, various styles of separators, churns and butter workers, and with a complete sterilizing outfit for pasteurizing milk and cream on a large scale.

The Experiment Station Field.—The field experiments of the Missouri Experiment Station offer exceptional opportunities for the study of comparative methods of cultivating and growing farm crops.

Horticulture.

Professor WHITTEN; Mr. BOOTH; Mr. MURRAY and Mr. GOODMAN.

The following courses are offered:

- 1b. Horticultural methods. Lectures. *Second semester, M. W. F., at 8:30.* Professor WHITTEN. (Second Year.)

The work consists of lectures, supplemented by required readings and practical exercises. The propagation, transplanting, cultivation, pruning, gathering, and marketing of fruits and vegetables, are the principal topics discussed. When necessary, the lectures are given in the field, the green-houses, or the propagating rooms, in order that they may be illustrated by practical object lessons. Each student is required to make cuttings and grafts, prepare composts, sow seeds, transplant, prune, etc., performing as many of the various horticultural operations as the time will permit.

- 2a. Science of Horticulture. Lectures. *First semester, T. Th. S., at 8:30*
Professor WHITTEN. (Third Year.)

Principles underlying the various horticultural operations; plant growth and behavior of plants under culture; variation, selection, and crossing with reference to plant breeding. In this course the aim is to acquaint the student with the reasons for the various horticultural operations—how and under what conditions seeds germinate, cuttings take root, grafts unite, and wounds heal; what environments cause variation in plants; how our cultivated plants are brought to perfection from their wild types; and how and why cultivation affects plants.

- 3b. Forestry. Lectures. *Second semester, T. Th., at 8:30.* Professor WHITTEN. (Third Year.)

In this course are considered the influence of forestry on climate, soil, and flow of streams; the management of forests; the characteristics and uses of typical woods; the specific characters of our principal forest trees in their winter condition; and something of the forest geography of the country.

- 4b. Landscape Gardening. Lectures. *Second semester, M. W., at 9:30.* Professor WHITTEN. (Fourth Year.)

Laying out and planting of ornamental grounds, the making of roads, lawns, flower and shrubbery borders, the consideration of trees, shrubs, and flowering plants, are the principal topics of this course.

5. General Horticulture. (Twelve Weeks' Winter Course in Agriculture.) Forty Lectures. Professor WHITTEN.

Construction and management of hotbeds and cold frames; propagation of plants, including germination of seeds, making cuttings, budding, grafting, and layering; pruning and cultivating orchards and small fruits, and spraying for insects and fungous diseases; originating and improving varieties of fruits and vegetables by cross-fertilization, selection and cultivation. (See circular of Short Winter Course.)

6. Nursery Work. Through January, in Winter School of Horticulture. Lectures and Laboratory. Mr. MURRAY.

Twenty-four lectures on Practical Nursery Work, embracing grafting, budding, packing for storage or shipment, growing and grading nursery stock, etc. In addition to the lectures, twelve afternoons will be devoted to the actual work of grafting, budding, grading, packing, etc.

7. Orchards and Small Fruits. Through February, in Winter School of Horticulture. Lectures and practical exercises. Mr. GOODMAN.

Twenty-four lectures, treating of soils and localities adapted to fruit; varieties; time and manner of planting; pruning; cultivation and general treatment; harvesting and marketing fruits. Twelve afternoons will be devoted to practical work in laying out, planting and pruning orchards; and to grading and barreling apples.

8. Market Gardening, and Hotbed Forcing. Through March, in Winter School of Horticulture. Lectures and practical exercises. Professor WHITTEN.

Twenty-four lectures, treating of the planting, growing, and marketing of the ordinary garden crops, such as cucumbers, mushrooms, radishes, lettuce, parsley, onions, etc.; hotbed construction; mixing soils, planting, transplanting and watering, bunching, marketing, and hotbed methods. In addition to these lectures, twelve afternoons will be devoted to practical work in growing tomatoes, asparagus, plant, lettuce, radishes, etc.

9. Floriculture, Landscape Gardening, Fungous Diseases and Fungicides. In winter School of Horticulture. Lectures. Professor WHITTEN.

Floriculture.—Ten lectures and four practical exercises in the propagation and culture of flowers, including the making of cuttings, the mixing of soils, potting, watering, managing temperatures, germination of seeds, marketing cut flowers, etc.

Landscape Gardening.—Ten lectures on the laying out and planting of grounds, the making of drives and walks, the planting, pruning and management of trees, shrubs and flowers.

Fungous Diseases and Fungicides.—Twenty lectures, setting forth the nature of the destructive diseases of orchard trees, small fruits, and other plants. The cause of the various rots, blights, rusts, mildews, scabs, and other fungous diseases which prevail in our State will be described, and specimens of diseased fruits and plants will be shown as object lessons, in the class room, so that the students will be able to recognize them. The nature of the attacks of these diseases upon plants, and how they spread from tree to tree and orchard to orchard will be made plain. The best means of checking their attacks by sanitary methods and by spraying will be discussed and ample practice will be given in mixing, testing, and applying spraying solutions.

10a. Horticulture Laboratory. First semester, M. W. F., at 8:30. Professor WHITTEN. (Fourth Year Elective.)

The preceding courses are required. This course provides for carrying on independent lines of investigation—variety study of fruits or vegetables on the grounds; propagation of plants under various conditions of heat, moisture, sunlight, etc., in the greenhouse and hotbeds; seed testing and the treatment of refractory seeds.

Facilities for Instruction:

The Horticultural grounds include 32 acres, containing a well-planted lawn with shrubbery and flower borders, collections of various kinds of small fruits and grapes, and representative varieties of stone fruits, apples, and pears. Over 900 varieties of orchard fruits are now growing on the grounds. Nut trees from selected stock are being put out and our native wild fruits are being collected and planted. Many kinds of vegetables are grown every year. A class room, an herbarium and seed room,

a photographic room, and a library have been equipped in a substantial brick building on the Horticultural grounds. A greenhouse, one of the finest in the State, has been erected for practical work in Horticulture. This, together with a commodious propagating house and a range of hot-beds, affords ample opportunity for teaching methods of propagating and forcing plants. The department has a Horticultural herbarium of moderate size. The experiment orchards, vineyards, vegetable plots, and nurseries afford excellent facilities for instruction in horticulture. The department has a file nearly complete of the Experiment Station literature of the country, the Experiment Station card-index to this literature, the reports and proceedings of various State horticultural societies, and the leading horticultural journals. The horticultural library has been increased to more than ten times its former size, and it now contains many valuable cultural and scientific treatises, which afford good opportunity for research in practical methods and in the sciences that underlie them. These works are systematically arranged, and are being indexed. The Experiment Station literature is systematically arranged in chronological order, in convenient filing cases. The department has about 700 jars of preserved fruits and vegetables exhibited at the World's Fair at Chicago, and the Trans-Mississippi Exposition at Omaha, and has a good collection of seeds and of horticultural products.

Entomology.

Professor STEDMAN.

The instruction in Entomology is given by lectures supplemented by laboratory and field work. As far as practicable the student collects and studies his own specimens. The collecting is done systematically in the fall while the insects are still alive; later, the field work is entirely replaced by laboratory work. The collecting includes the work done by insects, as well as their eggs, larvæ, pupæ, and adults, while their habits and economy receive due attention. The lectures cover the external and internal anatomy, life histories, habits, economy, and classification of insects; the characteristics of the orders, sub-orders, and principal families, with special emphasis upon those of economic importance, and the best methods of combating their ravages. The laboratory work embraces the study, by means of actual specimens, of the internal and external anatomy, of life histories, habits, economy, breeding, identification, or determination of genera and species, and the classification of those insects found in our fauna; and also economic work and original investigation for advanced students.

The following courses are offered :

- 1b. **General Entomology.** (1) Lectures. Internal and external anatomy, life histories, habits, economy, characteristics, classification, methods of destruction, machines and insecticides, apiculture. *Second semester, W, F., at 9:30.* (2) Laboratory work, collecting, preserving, breeding, methods, habits, life histories, work, external anatomy, identification or determination of orders, families and genera, classification. *Second semester, M., at 1:30.*
(Third Year.)
2. **Economic Entomology.** (For students of the Short Winter Course.)
See special catalogue to be issued in October, 1900.
3. **Advanced Entomology.** Lectures and Laboratory work. Internal anatomy, histology, physiology, embryology, breeding, life histories, habits, economy, distribution, dimorphism, mimicry, determination of species, classification. *First and second semesters, at hours to be appointed.*
(Fourth Year Elective.)
Must be preceded by course 1b.
4. **Graduate work in Entomology.** Laboratory work. Monographing a group (scientific); monographing a species (economic). *Both semesters, at hours to be appointed.*
Must be preceded by Course 3.

All courses in Entomology are elective for Academic and other students. Agricultural students may elect Course 3 in the Senior year, and Course 4 in the Graduate years.

Facilities for Instruction and Research:

The Entomological laboratory occupies the second floor of the Horticultural building. This laboratory contains an Entomological Cabinet illustrating the habits, work, and life histories of the more important injurious and beneficial insects; and several thousand species of adult insects from all orders, correctly classified and labeled, accessible to the student for reference and comparison, and valuable for illustrating the lectures. The laboratory is supplied with compound microscopes, dissecting instruments, glassware, a large microtome, a paraffine bath, a hot oven, large and small breeding cages and jars, aquaria, spraying machines of various kinds, insecticides, and reagents. Twelve current periodicals on the subject of Entomology are received. These, kept in the laboratory in connection with the library, are accessible to the students at all times.

Agricultural Chemistry.

Professor SCHWEITZER.

- 1a. Agricultural Chemistry. *First semester, T. Th. S., at 9:30.*

(Third Year.)

General introduction; functions of the plant. Including production, conversion, transportation, deposition of organic matter; physiological structure of the cell; respiration; the green cell, an apparatus for doing work dependent upon light and heat; nitrogenous constituents of the plant and their relation to free and combined nitrogen; mineral constituents; membranous diffusion; assimilation; conditions of vegetation.

- 1b. Agricultural Chemistry. *Second semester, T. Th. S., at 9:30.*

(Third Year.)

Soil—its formation, composition, alteration by mechanical, chemical, biological agencies; its relation to light, heat, and moisture. Soil physics in general. Manures, natural and artificial—their composition, application, value. Theory of rotation of crops; extensive and intensive cultivation; industrial agriculture in general. Farm sanitation; air, respiration, vitiated air and ventilation, infection, contagion, germ theory of disease. Water—potable water, hard and soft; impurities in it, and their effects upon health and life. Food—composition and general properties; preservation of food; and food adulterations.

Veterinary Science.

Dr. CONNAWAY; Dr. LUCKY.

- 1b. The Anatomy, Physiology, and Hygiene of domesticated animals. *Second semester, M. W. F., at 8:30.*

(Third Year.)

This course is given by lectures and laboratory work, the latter consisting of the complete dissection of one or more animals, and a comparative study of such organs as show variations in the different species. Charts, models, and prepared specimens will also be available for illustrating this study. Practical demonstrations will be given in the Physiological laboratory of the more important functions of the animal body. The study of food stuffs and the action of the digestive fluids will receive special attention.

- 2a. Veterinary Medicine and Surgery. *First semester, three times a week.*

(Fourth Year.)

The first half of the semester is devoted to the study of the common diseases that affect the internal organs; lungs, stomach, intestines, urinary organs, etc.; the second half of the semester is given to the study of the diseases and conditions that require surgical treatment, such as lameness, wounds, abscesses, tumors, etc. A clinic is held one afternoon of each week for the treatment of the diseases discussed in the class room. In proper season instruction is given in castration, spaying, and caponizing.

3b. Contagious, Infectious, and Parasitic Diseases. *Second semester, three times a week.* (Fourth Year.)

This course will include the study of Influenza, Strangles (distemper), Glanders, Black-leg, Anthrax, Tuberculosis, Texas Fever, Actinomycosis (lump jaw), Swine Plague, Hog Cholera, and internal and external parasitic diseases, such as tape worm in lambs, verminous bronchitis, scabies, etc.

Practical exercises are given in disinfection of stables, and in preventive inoculation. The bacteriological technique necessary to a proper understanding of this course is given in the Bacteriological department—see below.

Lectures on National and State Quarantine Regulations will be given by the State Veterinarian.

4. Investigation of Animal Diseases. (Elective.)

Seniors and graduate students will be given an opportunity to assist in the investigations of animal diseases, in progress at the Experiment Station. (Three to six hours' credit.)

Bacteriology.

Dr. KAUFMANN.

1a. Bacteriology. Lectures 2 hours a week, laboratory 1 hour a week. *First semester, three hours a week.* (Fourth Year.)

The lectures will introduce the student to general questions in Bacteriology; the nature and development of bacteria, the history of Bacteriology, sterilization, disinfection, etc. In the laboratory they will be instructed in the preparation of culture media and in the methods of obtaining pure cultures. They will study some saprophytic and the most important pathogenic bacteria, in pure cultures on the different culture media and in microscopic preparations.

2b. Bacteriology. Lecture 1 hour a week, laboratory 2 hours a week. *Second semester, three hours a week.* (Elective.)

The lectures will introduce the student to general questions like immunity and disposition and special questions concerning agriculture, horticulture, dairying, infectious diseases of animals, etc. In the laboratory they will do practical work in the above mentioned subjects.

Shopwork.

Professor MARX; Mr. RODHOUSE; Mr. IRVINE.

The following course is offered:

1. Wood-working and Pattern-making. T. Th. S., at 10:30-12:30.

(First Year.)

This course begins with a series of exercises in wood-working, each of which is intended to give the student familiarity with the use of some tool. The course, as a whole, is expected to enable the industrious student easily and exactly to perform any ordinary operation familiar to the carpenter, to the joiner, and the pattern-maker. Time permitting, these exercises are followed by practice in making parts of structures, joints, small complete structures, patterns, core-boxes, and other constructions in wood. Particular attention is paid to the details of pattern-making.

Drawing.

Mr. RODHOUSE.

1. Agricultural Drawing. *M. Th. S., at 1:30.*

This work is arranged so as to be of special value to the farmer in designing buildings and machinery and in planning repairs on the farm. It embraces free hand drawing and shading, projections, geometric designs and constructions, working drawings, tracing, and blue printing.

Commercial Studies.

Miss PORTER.

The work in this course does not cover that provided in a full Business College Course, but is designed for those who wish to record the ordinary business transactions of every-day life in a business-like and systematic manner.

To this end instruction is given in correspondence, making out bills and statements, writing receipts, checks, notes, and drafts, together with the use of various account books. An important part of the work is a thorough drill in journalizing, concluding with the writing of entire sets of books, that the student may make a practical application of his previous work in the various business forms.

First semester, M. W. F., 10:30-12:30. (First Year.)

Stenography.—A full course in stenography is provided for those students who wish to carry on this study while prosecuting regular work in the University.

Three hours of class room work, supplemented by at least the same time in preparation, are required. The first semester is devoted to thorough drill in the principles of the system adopted, and the second semester to an application of these principles to reading and dictation exercises. These exercises include correspondence, addresses, and court-reporting. At the end of the year it is expected that the student will have attained a speed of from sixty-five to ninety words a minute, according to his application to the work. During the first year more attention is given to accuracy in writing and *reading*, than to practice for speed.

Those wishing to make the study valuable should continue dictation exercises during the second year.

Military Science.

Captain BUFFINGTON, Mr. TURNER.

An officer of the regular army is detailed by the War Department as Professor of Military Science and Tactics, to carry out the provisions of

the act of Congress of 1862, which, in endowing this and similar institutions, stipulates that military tactics shall be taught.

Students taking this instruction are required to conform to the special rules and regulations prescribed for the Military department. These requirements are so adjusted as to harmonize with the regular class-work.

The instruction offered in this Department is open to all students of the University. Military drill is given three times a week, from 4 to 5 o'clock. Each Senator and Representative of the General Assembly of Missouri is authorized by law to appoint two cadets from his district. Such cadets are matriculated in the Academic and Agricultural departments (including Engineering) free of tuition and other fees, except laboratory deposits. For information about cadetships, uniforms, cadet band, equipment in artillery, and small arms, see announcement of the Department of Military Science and Tactics, page 126.

English.

Assistant Professors PENN and BELDEN.

1. Elementary Studies in Literature and Composition. Essays. T. Th. S., at 9:30. (First Year.)
2. Rhetoric (Hill's *Foundations of Rhetoric*) and Literature. T. Th. S., at 8:30. (Second Year.)

Economics.

Professor HICKS.

The following courses are required:

- 1a. Theory of Economics. *First semester, M. W. F., at 11:30.* (Fourth Year.)
- 2b. Theory of Finance. *Second semester, M. W. F., at 11:30.* (Fourth Year.)

Course 2b must be preceded by 1a.

Mathematics.

Mr. FLEET, Mr. MOORE, and Mr. SELSOR.

1. Algebra. M. F. W., at 8:30. (First Year.)
Text: Milne's High School Algebra, beginning with Quadratics.
- 1b. Plane Geometry. *Second semester, T. Th. S., at 8:30.* (First Year.)
Text: Phillips and Fisher's Geometry.
2. Geometry.—Plane and Solid Geometry. M. W. F., at 11:30. (Second Year.)
- 2a. Trigonometry. *First semester, T. Th. S., at 11:30.* (Second Year.)

Physics.

Professor LIPSCOMB; Mr. GRIFFITH.

The following courses are required :

- 1a. Elementary Physics. *First semester: Lecture, M., at 11:30: Laboratory, W. S., at 1:30. (First Year.)*
- 2b. Elementary Physics, and Laboratory. *Second semester: Lecture, M., at 11:30; Laboratory, W. S., at 1:30. (First Year.)*
- 3a. Advanced Physics. *First semester, M. W. F., at 1:30. (Third Year.)*

Chemistry.

1. Chemistry, Inorganic and Hygienic, and Toxicology. Lectures, laboratory work and recitations. *Both semesters, three times a week. (First Year.)*
2. Chemistry, Organic, Physiological and Pathological, and Toxicology. Lectures, laboratory work and recitations. *Both semesters, three times a week. (Second Year.)*

Botany.

Professor LEFEVRE; Dr. THOM.

1. General Biology. Lectures and Laboratory. *Second semester, three times a week.*
The course includes a study of both plant and animal forms. It is designed to give the student a comprehensive idea of the nature of organic beings with sufficient knowledge of the forms of animal and plant life to enable him to work intelligently in either field.
2. Structural Botany of Phanerogams. Lectures and Laboratory. *Three times a week. (Elective.)*
3. Systematic Botany. Class and field work on local flora. *Second semester, T. Th. S., at 1:30. (Third Year.)*
4. Economic Botany. A course intended to cover the structure and relations of our cultivated plants. *(Elective.)*

Geology.

Professor MARBUT.

The following course is required :

- 4b. Economic Geology. *Second semester, T. W. F., at 10:30. (Fourth Year.)*

This course deals with subjects from their economic aspect, such as water supply, mineral springs, fertilizers, the origin and relation of soils to the underlying rock structure, clays, cement, etc. Text-book: Tarr's Economic Geology.

Climatology.

Mr. HACKETT.

1a. Climatology. *First semester, P., at 9:30.* (Fourth Year.)

This covers Elementary Meteorology; the laws of storms; weather forecasts, how made, and distributed, and the advantages to be derived from them; frosts, how they may be anticipated, and what measures may be taken to prevent damage therefrom; weather charts and their uses; the climate of Missouri; local climate peculiarities, and their effects upon certain crops.

B. THE AGRICULTURAL EXPERIMENT STATION.

BOARD OF CONTROL:

The Curators of the University of the State of Missouri.

ADVISORY COUNCIL:

The Missouri State Board of Agriculture.

OFFICERS OF THE STATION.

THE PRESIDENT OF THE UNIVERSITY.....	
H. J. WATERS, B. S. A.....	Director
PAUL SCHWEITZER, Ph. D.....	Chemist
J. C. WHITTEN, B. S.....	Horticulturist
J. M. STEDMAN, B. S.....	Entomologist
J. W. CONNAWAY, M. D. C.....	Veterinarian
N. O. BOOTH, B. Agr.....	Assistant in Horticulture
T. I. MAIRS, B. Agr.....	Assistant in Agriculture
C. THOM, A. M., Ph. D.....	Instructor in Botany
W. B. CADY, B. S.....	Assistant in Chemistry
*A. E. HACKETT.....	Section Director Missouri Weather Service
JOHN SCHNABEL	Gardener
J. G. BABB, A. M.....	Secretary
R. B. PRICE.....	Treasurer
C. L. WILLOUGHBY... ..	Clerk and Stenographer

This station was established by the act of Congress of 1887, and by the acts of the General Assembly of Missouri accepting its provisions. By order of the Board of Curators of the University of the State of Missouri it is made a department of the College of Agriculture.

*In the service of the U. S. Government.

The following are the essential sections of the act of Congress referred to, and define clearly the objects to be accomplished in the organization of these stations:

"Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and application of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each State or Territory, established, or which may hereafter be established, in accordance with the provisions of an act approved July second eighteen hundred and sixty-two, entitled 'An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts,' or any of the supplements to said act, a department to be known and designated as an 'Agricultural Experiment Station.'

"Sec. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and waters; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States and Territories.

"Sec. 3. The bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster-General may from time to time prescribe."

It will be noted that the act of Congress of 1862 was designed to promote Agricultural education, while that of 1887 provides for Agricultural investigation.

The Station uses such parts of the College farm and equipment as are needed for experiments.

The results of experiments are given to the public in a series of bulletins, which are furnished free of charge to any one applying for the same. These bulletins are numbered from 1 to 35 of the Farm series, and from 1 to 48 of the Station series, since its organization in 1888.

During the year five Bulletins and an Annual Report were published, aggregating 150 pages, reporting the results of careful scientific experiments on insects injurious to fruit, sugar beets, Texas fever, etc.

Thirteen thousand copies of each were distributed free to the newspapers of the State and to the Agricultural press, the libraries of colleges and high schools in Missouri, and to the leading farmers of this and adjoining States. In addition to the regular Bulletins of the Experiment Station numerous Circulars of Information and Special Newspaper Bulletins have been published.

The experimental work has been greatly expanded and made more exact and scientific, its practical and economic phases being kept constantly in view.

In Agriculture, investigations are now under way covering questions of maintenance of soil fertility; the renovation of worn-out soils; the most efficacious rotation of crops; green manure crops, forage crops; varieties of grains, grasses, potatoes, etc.; best methods of tillage for corn; effect of subsoiling and tile draining; feeding experiments designed to ascertain the cheapest foods for pork and beef production, and the cheapest method of wintering cattle.

In Horticulture over 500 named varieties of apples, 180 of plums, 140 of grapes, 25 of peaches, 25 of pears, 160 of strawberries and other fruits, are growing and being tested upon the Horticultural grounds. In addition, several hundred varieties of seedling strawberries, one-half of them the result of careful cross-breeding of known parents, have been originated and are giving promise of good results on the grounds. During the past year, seeds of hand-pollinated peaches and plums, and selected seeds and plants of promising types of native nuts, persimmons, pawpaws, and other wild fruits have been planted. A collection of figs, Japanese persimmons, and other foreign fruits and nuts, has been secured. The work of plant breeding has been continued with a view of obtaining varieties better adapted to our climatic conditions. The leading varieties of vegetables are tested as they come on the market.

Experiments in spraying with various mixtures for fungous diseases are carried on in a number of private orchards as well as on the experimental grounds. Experiments in pruning and grafting are in progress in the new orchards and in the vineyard. The various orchard trees and vines are observed for their pollinating characteristics and to see whether self or cross fertilization occurs in each variety. Methods of protecting tender buds are being tried. An experiment in breeding tomatoes is in progress.

The Entomological department is conducting extensive experiments in the best methods of suppressing insects injurious to farm, garden and orchard crops.

The extensive experiments with Texas fever carried on by the Station in co-operation with the Missouri State Board of Agriculture and the Texas Experiment Station have been continued with very satisfactory results.

A careful study of the composition and food value of the principal kinds of animal and vegetable fats is being made by the Chemical department of the Station in co-operation with the Federal Government.

For further information concerning the College of Agriculture or the Experiment Station, address

H. J. WATERS,

Dean and Director,

Columbia, Mo.

C. SCHOOL OF MECHANIC ARTS.

The object of this course is to educate the mental and physical powers of the student simultaneously—to train the mind to the hand and the hand to the mind. The instruction is intended to develop the power of observing phenomena which occur about us daily, and to cultivate skill of hand and eye.

The course is sufficiently broad to enable the student at its completion to continue work in the University. After the completion of this course, any of the Engineering courses can be completed in three years more.

The entrance requirements for this course are the same as for the Agricultural course. (See page 135.)

First Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	3
English	3	English	3
Book-keeping	3	Shop, carpentry and joinery	3
Shop, carpentry and joinery	3	Drawing	3
Drawing	3	Book-keeping	3

Second Year.

First Semester.		Second Semester.	
Mathematics	6	Mathematics	6
English	3	English	3
Chemistry	3	Chemistry	3
Shop, forging	3	Shop, forging	3
Drawing	3	Drawing	3

Third Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	3
English	3	English	3
Physics	3	Physics	3
French, German, Spanish	3	French, German, Spanish	3
Drawing	3	Drawing	3
Shop, machine	3	Shop, machine	3

Fourth Year.

First Semester.		Second Semester.	
Mathematics	3	Mathematics	3
English	3	English	3
Descriptive Geometry	3	Elements of Applied Mechanics	3
French, German, Spanish	3	French, German, Spanish	3
Drawing	3	Descriptive Geometry	3
History	3	History	3

(For description of Shopwork, see page 143.)

The following courses in Mechanic Arts are offered :

I. SLOYD (COURSE FOR TEACHERS.)

1. Card Board Work:

(a) Light cardboard work adapted to children in the third grade—drawing and cutting out with scissors geometrical figures, and elementary folding.

(b) Heavy cardboard work adapted to children in the fourth grade—laying out, cutting, and pasting geometrical solids and such articles of home life as appeal to children.

2. Knife Work:

(a) Adapted to children in the fifth grade. Laying out and cutting out with a knife various objects involving two dimensions that appeal to the child's tastes. The material used is bass wood three-sixteenths of an inch thick.

(b) Adapted to children in the sixth grade. The making of objects involving three dimensions, with geometrical and with free surfaces, by the free use of the knife. The material used is straight-grained pine wood.

3. Bench Work:

(a) Adapted to children in the seventh grade. The use of simple bench tools in developing objects of interest with free and with geometric outlines.

Facilities for Instruction:

The building for Mechanic Arts, 108x117 feet, has two stories and a basement. It contains six work-shops 40x40 feet, an exhibit hall 25x40, two offices 16x18, one drawing-room 40x40, two class-rooms 18x22, besides store-rooms, engine-room, lavatories, etc. The machinery is driven by a 12x36-inch Corliss engine.

Four hundred students in classes of 24, each class occupying two hours and a half a day, can easily be taught. The carpenter and pattern shop has accommodations for four classes of 24 students each. Each student has for his exclusive use a lock-drawer and a set of tools, for the care and safety of which he is held responsible.

There are 25 speed lathes for wood-turning, 25 sets of bench tools, 96 sets of edged tools, and as many lock-drawers.

The blacksmith-shop is equipped with 25 forges, 25 anvils, and 25 sets of forge tools.

The machine-shop is equipped with four screw-cutting engine lathes 14" swing, 8' bed; one screw-cutting engine lathe 18" swing, 8' bed; one polishing lathe, 12" swing, 6' bed; and 26x26 Gray planer; two 16" crank-shapers; one pipe-cutting and threading machine; one wet and dry emery grinder and surfacer; one 24" drill-press; one cold cut-off saw; and with tool-room and ample bench outfit.

The blast for the forges is supplied by a power blower. A 48" exhaust fan keeps the shops cool and free from smoke and gases, even when all the fires are going in the forges.

Two large shops, each 40x45 feet, are as yet unfurnished, but will be equipped with benches and speed lathes, or moulding outfit, to suit the demands of the future.

The whole building is lighted by a 360-lamp dynamo, situated in the engine-room.

Method of Instruction:

The teaching is oral. The instructor at the bench, machine, or anvil fully explains the principles to be used, and all work involving new principles is executed in the presence of the whole class. Free use is made of drawings and the black-board.

When every step has been explained, the class proceeds to the execution of the work, while the instructor superintends and gives help to such as need it.

A series of 25 or 30 graduated exercises is given in each shop. All the work is disciplinary. Special trades are not taught, nor are articles manufactured for sale. The value lies in the educational value of each exercise, in training the mind and hand to act simultaneously—the hand at the will of the mind.

who wish to prepare themselves to give instruction in Manual Training and Drawing in the High Schools and the district schools of Missouri. St. Louis and Kansas City have taken steps to introduce Manual Training and Drawing in the district schools. Similar movements have been made at Moberly, Carthage, and other cities. Within a few years there will be probably not a district school in any town of five thousand inhabitants in Missouri in which Manual Training and Drawing will not be taught regularly. The State University is the only institution in Missouri at which teachers can find instruction in Pedagogy and at the same time in Manual Training and Drawing. Our shops have cost us, including the building, and the equipment, more than \$50,000. The entire building—a large one—is devoted to drawing and shop work. Three men give instruction regularly in these subjects. The work in the shops requires skill rather than strength. It can be done by women as well as by men. A number of women have taken it with eminent success.

On the completion of the four years' course in Mechanic Arts a certificate is given.

Other Courses:

The School of Mechanic Arts offers several elementary courses to students in the School of Agriculture, which are announced on page 1-500. A four years' course is outlined in Mechanical Engineering (see page 165) which leads to a professional degree.

For information as to tuition fees and other expenses, see pages 43-46.

D. SCHOOL OF ENGINEERING.

Requirements for Admission:

The following are the requirements for admission to the Freshman Class for the session of 1900-1901:

1. French or German or Spanish—two years' work.

The two years' work in German means the ability to read at sight ordinary German prose, and to translate simple English sentences into German, and includes a correct pronunciation of the language. Two years' work in French or Spanish means a like ability in these languages. For the present the University provides instruction for such students as have not had the two years of Modern Languages required for entrance, and are therefore conditioned thereon, but such work is not counted toward graduation. For entrance only, students may for the present substitute two

years of Latin for the requirements in Modern Languages, but the suspended requirement must be made good as soon as possible.

2. English. Same as for Group III (B. S.) in the Academic department. See page 21.

3. Mathematics. Algebra and Plane Geometry. The equivalent of Milne's High School Algebra, and Phillips and Fisher's Plane Geometry, is required.

4. Science. One year's work each, with laboratory practice in any two of the following sciences: Biology (Botany and Zoology), Physics, Chemistry.

5. History. Same as for the Academic department, Group II (A. B.), page 22.

A student must pass on at least ten units (see page 23). On the other two he may be conditioned; but no student deficient in Mathematics will be allowed to enter the School of Engineering.

Beginning with the session of 1901-1902, twelve (12) units without condition will be required for admission to all courses in Engineering and Architecture. But in case the student presents solid Geometry and it is accepted, he may be conditioned on one of the other eleven (11) units.

Courses and Degrees:

The five courses offered below lead respectively to the degrees of Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering, Bachelor of Science in Sanitary Engineering, and Bachelor of Science in Architecture. A special course of one year in Civil Engineering for surveyors leads to a certificate.

During the vacation following the Junior year, Engineering students are required to visit, and to write a report, with necessary drawings, of some engineering enterprise in their respective lines of work.

For general statement as to buildings and equipment, see pages 36-39.

For information as to tuition charges, fees, etc., see pages 43-46.

The degrees of Civil Engineer (C. E.), Electrical Engineer (E. E.), and Mechanical Engineer (M. E.), will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*. The candidate must pass an examination on his graduate work and present a satisfactory thesis. Those who with professional practice pursue graduate work *in absentia* must be regularly enrolled as graduate students paying the usual fees.

Civil Engineering.

Professor Carr.

The instruction is given by means of lectures and recitations, ~~sup~~plemented by draughting, field, and laboratory work. The field work ~~em~~braces the modern methods of land, railroad, and mining surveying, ~~whi~~laboratory work is provided in Chemistry, Geology, Physics, and ~~Engin~~earing. The course of instruction has been planned with a view to laying a substantial foundation for the general and technical knowledge ~~needed~~ by practical engineers.

There is a complete equipment of Transits, Compasses, Levels, Chains, Levelling-rods, Stadia rods, etc., and students have free access to the museums and laboratories in all the other Departments of the University.

COURSE OF STUDY.

Freshman Year:

First Semester.

Plane Trigonometry and Solid Geometry.....	3
Algebra	3
English—Rhetoric, Composition, and Literature.....	3
Chemistry	3
Descriptive Geometry—Orthographic projections, problems of points, lines and planes. Representations of surfaces, tangencies and intersections, perspective and isometric	3
Shop—Use of joiners' tools, and wood-turning.....	3

Second Semester.

Spherical Trigonometry and Analytical Geometry	3
Algebra	3
English—Rhetoric, Composition and Literature	3
Descriptive Geometry	3
Chemistry	3
Shop—Pattern-making	3

Sophomore Year:

First Semester.

Second Semester.

Drawing—Tinting, tracing, blue printing, and topographical.....	3
Physics	3
Mathematics—Calculus	3
Shop—Forging	3
Surveying—Use of instruments, the theory and practice of Land Surveying, Topography	3

Junior Year:*First Semester.*

Mechanics of Engineering	6
Calculus	3
Railroad Engineering—Economic theory of location, curves, field engineering, construction, signal system, track work, elevated and underground roads, etc.	3
Steam Engineering—Types of engines and boilers, details of construction, indicator, valve gears and valve adjustments.....	3

Second Semester.

Mechanics of Engineering	6
Calculus	3
Railroad Engineering	3
Steam Engineering	3
Vacation work required (see page 161).	

Senior Year:*First Semester.*

Astronomy—Practical Astronomy, with night observations.....	3
Framed Structures	3
Bridge Engineering—Design and details.....	3
Hydraulics	3
General Civil Engineering—Highways, masonry, foundations, municipal and sanitary engineering, etc.	3

Second Semester.

Geodesy and Least Squares—Figure of the earth, U. S. Coast and Geodetic Surveys, etc.	3
Hydraulic Engineering—Water collection and distribution, water-wheels, turbines, rivers, harbors, canals, etc.....	3
Bridge Engineering	3
General Civil Engineering	3
Machine Design	3

SPECIAL COURSE IN SURVEYING.

A special course in Surveying is offered in addition to the regular four years' course. This is designed especially for those wishing to fit themselves for the position of County Surveyor or Government Land Sur-

veyor. A certificate of proficiency is given to those who complete this course, which may be done in forty weeks. The requirements for entrance are the same as those for the regular course, with a working knowledge of Trigonometry added.

For the Rollins Scholarship, see page 59.

Electrical Engineering.

Professor SHAW.

This course fits young men for electrical designing, manufacturing, contracting, and for the installation and management of light and power stations; in short, is a thorough, broad training for Electrical Engineers.

The first two years are devoted to preliminary training in the languages, mathematics, the sciences, and in drawing and shopwork. The technical work comes in the last two years and consists of the theory and principles of electricity and magnetism; electrical measurements; calibration of instruments; tests of all kinds; design and construction; study of special problems in the generation, transmission, and distribution of electrical energy.

Special attention is paid to alternating current phenomena.

Instruction is given by means of recitations, lectures, and laboratory work, thoroughly correlated and arranged.

The apparatus is new, from the best makers, and includes instruments for electrical measurements of precision, a storage battery conveniently arranged for testing, an electric light plant, various types and sizes of direct and alternating current dynamos and motors, measuring instruments, etc.

The electric plant recently installed, the new laboratory and the purchase of additional apparatus, including a special two-phase rotary converter, have added materially to the equipment.

COURSE OF STUDY.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 162).

Junior Year:

First Semester.

Mechanics of Engineering (See M. E. Course, page 166)	6
Calculus	3
Electrical Machinery—Principles, construction, design and operation of generators, motors, etc.; power transmission and distribution; system and plants. Laboratory: characteristics, efficiencies, output limits, insulation tests, diseases and remedies	3
Electricity and Magnetism—General principles and laws and their application in electrical, magnetic and electromagnetic measurements of precision; cable testing; calibration of instruments	3

Second Semester.

Mechanics of Engineering	6
Calculus	3
Electrical Machinery	3
Electricity and Magnetism	3
Vacation work required, see page 161.	

Senior Year:

First Semester.

Alternating Currents—Theory of current flow; single and multiphase generators, motors, transformers and instruments; system of light and power distribution; laboratory tests as to regulation, operation, and efficiency; calibration of instruments.....	6
Steam Engineering (See M. E. Course, page 166).....	3
Electrical Design ..	3
Shop—Machine and vise work on metals.....	3

Second Semester.

Alternating Currents	6
Electrical Design ..	3
Steam Engineering	3
Shop—Machine and vise work on metals.....	3

Mechanical Engineering.

Professor MARX.

The practical and theoretical training given is intended to prepare young men for responsible positions. The practical work familiarizes them with the use of machine and hand tools; the theoretical acquaints them with the principles underlying all machine construction. Students thus become familiar with the conditions and problems that confront all designers, and all managers of machine shops.

In the study of prime movers special attention is given to turbines and other water motors, and to the steam engine.

In machine construction the theory of mechanism is thoroughly studied. It embraces the study of gearing, screws, cranks and levers, together with the design of machines and the materials used in their construction.

In mill-work, ventilation, heating, lighting, fire protection, arrangement of shafting, belting and machinery in manufacturing establishments, practical problems involving strength of shafting, belting, gearing, and the electrical transmission of power are fully treated.

In steam engineering attention is given to chimneys, furnaces, boilers,

and the setting of boilers with reference to proper combustion of fuel, to securing the greatest efficiency in the production of steam, and to proportioning parts for strength, durability and accessibility for repairs and cleaning. The care and management of boilers, engines and entire steam plants is an essential part of the study.

While pursuing these studies, the student is required to make plans, working drawings and estimates.

In the laboratory special attention is given to tests of engineering materials with regard to tension, crushing, elongation, and shearing; engine and boiler trials, as to efficiency; calorimeter trials as to quality of steam; valve-setting by aid of indicator. The erection, alignment and setting of engines are carefully considered.

The students in Mechanical Engineering have the use of full sets of working drawings of standard modern engines, a small but well selected departmental library, a 12x36 Corliss engine, a 10x10 direct connected McEwen engine, a 6x8 Weston engine, a 10 horse power gas engine, a 60 horse power Wheeler condenser, five boilers (one down draft, one Helne and three return tubular), a 50,000 pound Rhiele testing machine, a torsion machine designed and made in the shops, an oil testing machine likewise made in the shops, together with Indicators, Planimeters, Extensometers, Calorimeters, Tachometers, Thermometers, Crosby Steam Gauge Tester, Injector, Absorption and Transmission Dynamometers, Pyrometer, Engine Models, Pumps, Tanks, etc. In addition, they have the use of all the shops—see School of Mechanic Arts, page 156. In these shops they are trained in the use of wood and iron working tools. They also have the use of the Electrical Engineering laboratory, in such branches of Electrical work as are required in the M. E. Course.

COURSE OF STUDY.

The Freshman and Sophomore years are identical with those of the course in Civil Engineering, see page 162.

Junior Year:

First Semester.

Mechanics of Engineering—Statics, dynamics.....	6
Steam Engineering—Elements of steam engineering; description of types of boilers; engines, details of construction, dimension for given power plant, study of steam engine; indicator, valve gears and valve adjustments	3
Mathematics—Calculus ..	3
Kinematics—Principles of mechanism, rolling curves, teeth of wheels, quick return motion, straight line motion, valve and link motions..	3

Second Semester.

Mechanics of Engineering—Strength of material, stress and strain diagrams	6
Mathematics—Calculus	3
Machine Design	3
Steam Engineering—Bollers, study of details and different styles— Boller testing	3
Vacation work required (see page 161).	

Senior Year:

First Semester.

Steam Engine—Detail study of different types, design and construction..	3
Electrical Machinery	3
Shop—Machine and vise work	3
Hydraulics	3
Thermodynamics	3

Second Semester.

Steam Engine Design continued	3
Hydraulics and Hydraulic Motors—Water wheels, turbines and pumps..	3
Mechanical Laboratory	3
Shop—Machine and vise work	3
Electrical Machinery	3

Sanitary Engineering.

Professor CORY.

This course is intended to give the students such knowledge of the principles and practices of modern sanitation as will make them distinctively sanitary engineers. To this end the course has been made most thorough as regards those sciences which immediately underlie this particular branch, Biology, Bacteriology, and Chemistry.

The modern methods of constructing buildings, ventilation, lighting, heating, plumbing, sewage and garbage disposal, water supply and city engineering are taught thoroughly by means of lectures, recitations, laboratory work, and the study of existing buildings and plants.

COURSE OF STUDY.

The Freshman and Sophomore years are identical with those of the Civil Engineering course (page 162) with the exception that Chemical Water Analysis is required three hours per week during the first semester of the Sophomore year in the place of Metallurgy.

First Semester.

Mechanics	6
Calculus	3
Steam Engineering (See M. E. Course, page 160).....	3
Biology	3

Second Semester.

Mechanics	6
Calculus	3
Steam Engineering	3
Biology	3

Vacation work required (see page 161).

Senior Year:

SCHOOL OF ARCHITECTURE.

B. SCHOOL OF ARCHITECTURE.

Requirements for Admission:

The requirements for admission to this School are the same as to School of Engineering, see page 160.

Equipment:

An excellent beginning has been made in the equipment of the School of Architecture. Two large draught-rooms, each 40x40, with classrooms, instructors' rooms and library are given up to the exclusive use of the students of Architecture.

There is a carefully selected department working library, including many of the standard books on Architecture and the allied arts, in English, French and German, necessary for thorough instruction and research. Photographs of buildings in all countries illustrating the history of all styles, are available for reference in design; and in addition to the plates and drawings representing the progress in Architecture in the United States, are classified for practical use. A set of plaster models of all the orders of Architecture, including full size entablatures, capitals and bases have been especially designed and made for this School. The equipment also includes many large framed photographs of the masterpieces of Architecture, and a collection of lantern slides for classroom use.

The museum of classical Archaeology is supplied with models of temples and with casts of specimens of Greek and Roman Art; the Engineering School has laboratories for testing the materials of construction and for illustrating the installation of various plants in buildings of all kinds; and shop-work in all branches is in constant progress. Students have free access to the museums and laboratories in all other Departments of the University.

Architecture.

Professor NOLAN.

This course is arranged to combine a thorough and competent knowledge of Architecture and allied studies from a scientific, aesthetic and practical point of view, with the essentials of a general college education. The study of this subject, as here presented, gives to the students not only professional training in the science of Architecture, but also offers them many of those elements of liberal culture which pertain especially to the art of Architecture.

During the Freshman year, the students devote the major portion of the time required to the collegiate studies, the instruction in which

Identical in character with that given in the Engineering courses; but at the same time, from the beginning of the Freshman year, the purely professional work begins, occupying three afternoons a week in that year, comprising constant exercises in instrumental and free-hand drawing, and in the acquisition of the Architectural manner of representing form and color.

Beginning with the Sophomore year, in addition to Mathematics, Physics, and Mechanics, parallel courses are given in Drawing and Design, in the History of Architecture and Ornament, in Construction, Specifications and Building Materials, and in the Warming, Ventilating, Plumbing and Sewerage of Buildings.

While Architecture is taught here, as it is in all the great schools, as a Fine Art, and while the instruction in Design, modeled after the *methods* of the School of Fine Arts in Paris and modified to suit American conditions, is carried through the four years of the course, and is the most important single subject taught; a thorough training is, at the same time, given in the solution of problems of construction and materials, in building processes, in the principles of professional practice, and in all those subjects which may be classified under the head of Architectural Engineering.

Familiarity with the masterpieces of design and construction is acquired by a most thorough course of lectures on the History of Architecture, given from the point of view of the Architect, and extending over three years; the three divisions, Ancient, Mediaeval, and Modern Architecture being given in rotation, and the Sophomores, Juniors and Seniors taking the lectures together.

COURSE OF STUDY.

Freshman Year.

First Semester.

Plane Trigonometry and Solid Geometry	3
Algebra.....	3
English—Rhetoric, Composition and Literature.....	3
Descriptive Geometry—Orthographic projections, problems of points, lines and planes, Representations of surfaces, tangencies and intersections, perspective and isometric.....	3
Chemistry	3
Elementary Architectural Drawing—Exercises in instrumental and free-hand drawing with brush, pencil and pen.....	3

Second Semester.

Spherical Trigonometry and Analytic Geometry	3
Algebra.....	3

English—Rhetoric, Composition and Literature.....
 Descriptive Geometry—Architectural shades and shadows, perspective..
 Chemistry
 Elementary Architectural Drawing

Sophomore Year.

First Semester.

Mathematics—Analytic Geometry
 The Elements of Architecture—The Five Orders.....
 History of Ancient Architecture—Egyptian, Assyrian, Persian, Greek,
 Roman..
 Physics..
 Architectural Drawing—Pen and pencil work, and rendering in India ink
 and color

Second Semester.

Mathematics—Calculus..
 The Elements of Architecture,—Mouldings, pedestals, pilasters, pedi-
 ments, intercolumniation, superposition, balusters and balustrades
 arches, and arcades, imposts, doors, windows, roofs, spires, steps
 stairs, vaults, domes
 History of Ancient Architecture.....
 Physics..
 Architectural Drawing—Historical drawing, construction drawing, pen-
 and-ink rendering

Junior Year.

First Semester.

Mechanics of Architecture and Engineering—Statics, dynamics.....
 Mathematics—Calculus.....
 History of Mediaeval Architecture—Byzantine, Romanesque, Gothic...
 Elements of Architectural Design—Problems involving the use of the
 Orders

Second Semester.

Mechanics of Architecture and Engineering—Strength of materials
 stress and strain
 Mathematics—Calculus
 History of Mediaeval Architecture
 Elements of Architectural Design—Problems in design, introducing the
 principles of planning and composition
 Vacation work required, see below.

Senior Year.

First Semester.

Building Materials, Construction—Stones, bricks, cements, plasters
 fire-proofing, woods, paints, iron and steel, etc.....

Architectural Design—Sketch problems, regular problems	3
History of Renaissance and Modern Architecture—The Renaissance, Modern Revivals, Oriental and American Architecture	3
Warming and Ventilating of Buildings.....	3
Theory of Architecture—The theory of form, symbolism, proportion, planning, composition, and style,—lectures and drawing.....	3

Second Semester.

Working Drawings, Specifications, Office Practice—Masonry, woodwork, ironwork	3
Advanced Architectural Design—Advanced problems completing the stu- dies in planning and composition.....	3
History of Renaissance and Modern Architecture	3
Plumbing and Sewerage of Buildings.....	3
Thesis—An extended problem in planning and composition, accompanied by descriptive essay and memoir on construction.....	3

VACATION WORK.

Every student in the Junior class is required during the vacation following the Junior year, to prepare a report upon some suitable Architectural work from personal observation and study. These reports are required to be handed in during the following term.

VIII. The School of Mines and Metallurgy.

A Department of the University of the State of Missouri.

(At Rolla, Missouri.)

EXECUTIVE COMMITTEE.

JOHN D. VINCIL, Chairman.....	St. Louis
M. E. BENTON.....	Neosho
D. A. McMILLAN..	Mexico
CHAS. L. WOODS,	HENRY WOOD,
Secretary.	Treasurer.

FACULTY.

RICHARD HENRY JESSE, LL. D.,
President.

GEORGE EDGAR LADD, Ph. D.,
Director and Professor of Mining and Geology.

ELMO GOLIGHTLY HARRIS, C. E.,
Professor of Civil Engineering.

AUSTIN LEE McRAE, B. S., S. D.,
Professor of Physics.

EUGENE THOMAS ALLEN, Ph. D.,
Professor of Chemistry.

GEORGE REINOLD DEAN, C. E.,
Professor of Mathematics.

HERMANN OTTO SCHULTZE, B. S.,
Instructor in Metallurgy.

PAUL JULIUS WILKINS, B. S.,
Instructor in Modern Languages.

JOHN BENNETT SCOTT,
Instructor in English.

JOSHUA HOWARD TAYLOR,
Instructor in Shop-work and Drawing.

VICTOR HUGO GOTTSCHALK,
ALBERT DYKE WILSON,
Assistants in Chemical Laboratory.

FRANCIS JOSEPH TAYMAN,
Assistant in Physical Department.

Organization:

In 1870, the General Assembly, in accepting the donation by the general government of lands for educational purposes, established an Agricultural College and School of Mines and Metallurgy, "the leading object of these Colleges" being "to teach such branches as are related to agriculture and mechanic arts and mining, including military tactics, and without excluding other scientific and classical studies, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." (R. S. 1889.) The Statutes fix the status of the School of Mines as a College of the State University. Its affairs are under the immediate supervision of the Executive Committee, consisting of three members of the Board of Curators of the University.

Location:

The School is located at Rolla, the county seat of Phelps county, on the St. Louis and San Francisco railroad, about midway between St. Louis and Springfield. Rolla has an altitude of 1140 feet above sea level and enjoys an agreeable and notably healthful climate. It is midway between the mining districts of Southeast and Southwest Missouri.

Requirements for Admission:

Applicants for admission not having diplomas from approved high schools must offer themselves for examination for the coming school year of 1900-1901 on studies equivalent to the *first three years* of a standard high school. Stress in these examinations will be laid on Mathematics and English.

The School of Mines offers the following four-year courses and several special shorter courses:

- I. Mining Engineering.
- II. Civil Engineering.
- III. Chemistry and Metallurgy.
- IV. General Science.

Degrees:

For the completion of any of these courses the degree of Bachelor of Science (B. S.) is given. The further degree of Engineer of Mines (E. M.), Civil Engineer (C. E.), Metallurgical Engineer (Met. E.), or Master of Science (M. S.) will be conferred on candidates who, after receiving the first degree from this University or one of equivalent standing, have spent in the same course one year (at least ten hours a week) in graduate work in the University, or two years in professional practice and in graduate work *in absentia*.

The candidate must pass an examination on his graduate work and present a satisfactory thesis.

COURSE I. MINING ENGINEERING.

This course is suited to fit a man for the conduct of mining operations in all their variety, from the prospecting for the mine through its working and from the treatment of its ores to the delivery of the finished product on the market.

FRESHMAN YEAR.

First Term.

Higher Algebra, lectures and recitations	5 hours
General Chemistry, lectures and recitations.....	4 hours
English, lectures and recitations	5 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

Second Term.

Trigonometry, lectures and recitations.....	5 hours
Geometry, lectures and recitations	5 hours
English, lectures and recitations	5 hours
Chemistry, laboratory work	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

Third Term.

Trigonometry, lectures and recitations.....	4 hours
Physics, lectures and recitations	5 hours
English, lectures and recitations.....	2 hours
French or German	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

SOPHOMORE YEAR.

First Term.

Analytic Geometry, lectures and recitations..	4 hours
Inorganic Chemistry, lectures.....	4 hours
Surveying, lectures	3 hours
French or German, lectures ..	3 hours
Chemistry, laboratory work.....	2 afternoons
Field Practice in Surveying.....	3 afternoons

Second Term.

Descriptive Geometry, lectures and recitations	3 hours
Calculus, lectures and recitations.....	4 hours
Applied Chemistry, lectures and recitations.....	5 hours
French or German, recitations.....	3 hours
Chemistry, laboratory work.....	3 afternoons
Drawing	2 afternoons

Third Term.

Descriptive Geometry, lectures and recitations....	3 hours
Calculus, lectures and recitations.....	4 hours
Physica, lectures and recitations.....	5 hours
French or German, recitations.....	5 hours
Chemistry, laboratory work....	2 afternoons
Surveying, field practice.....	1 afternoon
Physica, laboratory.....	2 afternoons
Applied Chemistry—Elective	3 hours

JUNIOR YEAR.

First Term.

Physica, lectures and recitations.....	5 hours
Geology, lectures	3 hours
Mineralogy, lectures	4 hours
Masonry Construction, lectures and recitations.....	3 hours
Chemistry, quantitative, laboratory work.....	3 afternoons
Ore Dressing, class room and laboratory.....	Saturdays
Physica, laboratory work	2 afternoons

Second Term.

Physica, lectures and recitations	2 hours
Geology, lectures	3 hours
Mineralogy, lectures and laboratory.....	4 hours
Mechanics, lectures and recitations	5 hours
Dynamo Electrical Machinery, lect. and rec.....	3 hours
Physica, laboratory work	2 afternoons
Electrical Measurements, laboratory work.....	3 afternoons

Third Term.

Geology, lectures	3 hours
Ore Dressing, lectures	3 hours
Metallurgy, lectures....	4 hours
Alternate Current Machinery, lect. and rec.	2 hours
*Stereotomy, lectures and recitations.....	1 hour
Ore Dressing, laboratory work	Saturdays
Drawing	2 afternoons
Dynamo and Motor Testing, laboratory work	2 afternoons

SENIOR YEAR.

First Term.

Metallurgy, lectures	5 hours
Electrical Transmission, lectures and recitations	5 hours

*Elective, but an equivalent amount of work is required.

Frame Structure, lectures and recitations	5 hours
Metallurgy, laboratory work	Saturdays
Metallurgy, designing	1 afternoon
Electrical Transmission, laboratory	2 afternoons
Drawing	1 afternoon

Second Term.

Metallurgy, lectures	5 hours
Steam Engineering and Power Transmission.....	5 hours
Hydraulics, lectures and recitations	5 hours
Designing	4 afternoons
Thesis..	1 afternoon

Third Term.

Mining, lectures	8 hours
Metallurgy, laboratory work.....	Saturdays
Thesis	5 afternoons

COURSE II. CIVIL ENGINEERING.

FRESHMAN YEAR.

Same as in Mining Engineering.

SOPHOMORE YEAR.

Same as in Mining Engineering, except that in third term Civil Engineers take Chemical Laboratory work one afternoon, and Field Practice two afternoons, instead of Chemical Laboratory two afternoons and Field Practice one afternoon.

JUNIOR YEAR.

First Term.

Physics, lectures and recitations	5 hours
Geology, lectures and recitations	8 hours
Masonry Construction, lectures and recitations ..	2 hours
Elective	2 hours
Physics, laboratory work..	2 afternoons
Drawing and Field Practice.....	3 afternoons

Second Term.

Physics, lectures and recitations	2 hours
Geology, lectures and recitations.....	8 hours
Mineralogy, lectures and recitations	4 hours
Mechanics of Engineering, lectures and recitations	5 hours
Elective.....	2 hours
Physics, laboratory work	2 afternoons
Drawing	3 afternoons

Third Term.

Geology, lectures and recitations.....	3 hours
Mineralogy, lectures and recitations	4 hours
Lines of Communication, lectures and recitations	5 hours
Stereotomy, lectures and recitations	1 hour
Metallurgy, lectures and recitations	4 hours
Drawing and Field Practice	5 afternoons

SENIOR YEAR.

First Term.

Frame Structure, lectures and recitations	5 hours
Astronomy, lectures and recitations	3 hours
Elective	5 hours
Drawing and Field Practice	3 afternoons
Elective, laboratory work.....	2 afternoons

Second Term.

Hydraulics, lectures and recitations	5 hours
Steam Engineering	5 hours
Elective	3 hours
Designing and Drawing	2 afternoons
Elective, laboratory work	1 afternoon
Thesis work	2 afternoons

Third Term.

Bridge and Sanitary Engineering, lect. and rec.....	3 hours
Elective	5 hours
Designing and Drawing	2 afternoons
Thesis work	4 afternoons

COURSE III. CHEMISTRY AND METALLURGY.

FRESHMAN YEAR.

Same as in Mining Engineering, except that German is obligatory.

SOPHOMORE YEAR.

Class room work same as Mining Engineering, except during the first term Elective 3 is substituted for surveying.

*Laboratory Work.**First Term.*

Chemistry	3 afternoons
Drawing	2 afternoons

Third Term.

Chemistry	3 afternoons
Physics	2 afternoons

JUNIOR YEAR.

First Term.

Physics, lectures and recitations.....	5 hours
Geology, lectures and recitations	3 hours
Mineralogy	4 hours
Masonry Construction, lectures and recitations	3 hours
Physics, laboratory work.....	2 afternoons
Chemistry, laboratory work	3 afternoons
Ore Dressing	Saturdays

Second Term.

Physics, lectures and recitations	2 hours
Geology, lectures and recitations	2 hours
Mineralogy, lectures and laboratory	4 hours
Theoretical Chemistry	5 hours
Elective	2 hours
Physics, laboratory work	2 afternoons
Chemistry, laboratory work	3 afternoons

Third Term.

A. Geology.....	} Either A and B, or C.	{	3 hours
B. Stereotomy....			1 hour
C. Theoretical Chemistry.....			5 hours
Ore Dressing, lectures and recitations			3 hours
Metallurgy, lectures and recitations			4 hours ..
Chemistry, laboratory work			4 afternoons
Ore Dressing, laboratory work.....			Saturdays
Stereotomy, for students electing A and B.....			1 afternoon

SENIOR YEAR.

First Term.

Metallurgy, lectures and recitations.....	5 hours
Thermodynamics, lectures and recitations	2 hours
*Organic Chemistry, lectures and recitations	3 hours
Elective	3 hours
Metallurgy, laboratory work	Saturdays
Chemistry, laboratory work	2 afternoons
Designing	2 afternoons

Second Term.

Metallurgy, lectures and recitations	5 hours
Electro-Metallurgy, lectures and recitations.....	3 hours
*Organic Chemistry, lectures and recitations	2 hours
Elective	3 hours
Electro-Metallurgy, laboratory work.....	2 afternoons
Chemistry, laboratory work	3 afternoons

Third Term.

*Organic Chemistry, lectures and recitations.....	4 hours
Metallurgical Problems	2 hours

*Students specializing in Metallurgy will be allowed to substitute for this course Elective work equivalent in amount, if approved by the Faculty.

Elective	3 hours
Metallurgy, laboratory work.....	Saturday
Chemistry, laboratory work and thesis	5 afternoon

ACADEMIC DEPARTMENT

with Electives from the courses in Engineering.

COURSE IV. GENERAL SCIENCE.

FRESHMAN YEAR.

First Term.

English Composition, Course I.	5 hours
Algebra	5 hours
Geometry	5 hours
Chemistry	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon
Elective.....	2 afternoon

Second Term.

English, Course I.....	5 hours
Algebra	5 hours
Geometry	5 hours
Physiology	5 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon
Elective.....	2 afternoon

Third Term.

Algebra	5 hours
Physics	5 hours
German or French.....	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	1 afternoon

SOPHOMORE YEAR.

First Term.

Higher Algebra	5 hours
English	3 hours
French or German	3 hours
Inorganic Chemistry.. ..	4 hours
Chemistry, laboratory work	2 afternoon
Elective	3 afternoon

Second Term.

Trigonometry.....	5 hours
French or German	3 hours
Elective	5 hours
English	5 hours
Elective, drawing or laboratory work	5 afternoons

Third Term.

Elective	5 hours
Physics	5 hours
French or German	5 hours
English.....	2 hours
Physics, laboratory work	2 afternoons
Elective, drawing or laboratory work.....	3 afternoons

JUNIOR YEAR.

First Term.

Physics	5 hours
Elective	3 hours
Physics, laboratory work	2 afternoons
Elective	3 afternoons

Electives :

Logic	2 hours
Surveying	3 hours
French or German ..	2 hours
Geology	3 hours
Mineralogy	2 hours
Astronomy	3 hours
Biology	3 hours
Physical Geography	5 hours
English History ..	5 hours
General History	5 hours
Masonry Construction	3 hours
Mathematics	5 hours

Second Term.

Physics	2 hours
Elective	10 hours
Physics, laboratory work	2 afternoons
Elective	3 afternoons

Electives :

Descriptive Geometry	5 hours
Dynamo Machinery	3 hours
Mechanics	5 hours
Theoretical Chemistry..	5 hours
Biology	3 hours
Mineralogy	4 hours
Geology	2 hours
Physical Geography	5 hours
Mathematics	5 hours

Third Term.

Elective	13 hours
Elective	5 afternoons

Electives :

Metallurgy.....	4 hours
Alternate Current Machinery	2 hours
Ore Dressing	3 hours
Stereotomy	1 hour
Theoretical Chemistry	5 hours
Geology	3 hours
Physical Geography	5 hours
Mathematics	5 hours

SENIOR YEAR.

All Elective.

During the Junior and Senior years, students specialize either in Mathematics and Physics or in Chemistry and Geology. Studies must be chosen with the approval of the Professor. Students are required to take twenty-one hours of class-room work, or sixteen hours of class-room work and five hours of laboratory work.

SPECIAL COURSE IN CHEMISTRY AND ASSAYING.

FIRST YEAR.

First Term.

English	5 hours
Algebra	5 hours
Chemistry	3 hours
Chemistry, laboratory work	3 afternoons
Elective	2 afternoons

Second Term.

English	5 hours
Algebra	5 hours
Elective	3 hours
Chemistry, laboratory work	3 afternoons
Elective	2 afternoons

Third Term.

Physics	5 hours
English	2 hours
Algebra.....	5 hours
Chemistry	3 hours
Elective	2 hours

SECOND YEAR.

First Term.

Chemistry	4 hours
Mineralogy	4 hours
Geology	3 hours
Chemistry and Assaying, laboratory work.....	4 afternoons
Ore Dressing	Saturdays

Second Term.

Applied Chemistry	5 hours
Mineralogy.....	4 hours
Geology	2 hours
Elective	2 hours
Chemistry and Assaying, laboratory work....	5 afternoons

Third Term.

Ore Dressing	3 hours
Geology	3 hours
Elective	5 hours
Chemistry and Assaying, laboratory work	4 afternoons
Ore Dressing	Saturdays

SPECIAL COURSE IN MINING.

FIRST YEAR.

First Term.

Algebra	5 hours
Geometry	5 hours
English	3 hours
General Chemistry	4 hours
Chemistry, laboratory work.....	1 afternoon
Drawing	2 afternoons
Shop practice.. ..	2 afternoons

Second Term.

Algebra....	5 hours
Geometry	5 hours
Trigonometry	5 hours
Chemistry, laboratory work	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

Third Term.

Algebra	5 hours
Trigonometry	5 hours
English or Physics	5 hours
Chemistry, laboratory work	1 afternoon
Drawing	2 afternoons
Shop practice	2 afternoons

SECOND YEAR.

First Term.

Surveying	4 hours
Inorganic Chemistry	4 hours
Geology	3 hours
Mineralogy	4 hours
Field practice	3 afternoons
Chemistry, laboratory work....	1 afternoon
Ore Dressing	Saturdays

Second Term.

Geology	3 hours
Mineralogy	4 hours
Mining	3 hours
Chemistry, laboratory work and assaying.....	5 afternoons

Third Term.

Geology	3 hours
Mining	4 hours
Ore Dressing	3 hours
Metallurgy, elective	5 hours
Ore Dressing, laboratory work	Saturdays
Elective	5 afternoons

SPECIAL COURSE IN ELECTRICITY.

FIRST YEAR.

First Term.

Algebra	5 hours
Geometry.....	5 hours
English	5 hours
Chemistry	4 hours
Chemistry, laboratory work	1 afternoon
Drawing	2 afternoons
Shop-work	2 afternoons

Second Term.

English.....	5 hours
Geometry	5 hours
Trigonometry ..	5 hours
Chemistry, laboratory work	1 afternoon
Drawing	2 afternoons
Shop-work	2 afternoons

Third Term.

English	2 hours
Physics	5 hours
Elective	5 hours
Chemistry, laboratory work	1 afternoon
Physics, laboratory work.....	2 afternoons
Drawing or shop-work	2 afternoons

SECOND YEAR.

First Term.

Inorganic Chemistry	4 hours
---------------------------	---------

Electricity and Magnetism.....	3 hours
Analytical Geometry	5 hours
Chemistry, laboratory work	2 afternoons
Physics, laboratory work	3 afternoons

Second Term.

Electricity and Magnetism	3 hours
Calculus	2 hours
Dynamo Electric Machinery	3 hours
Elective	5 hours
Chemistry, laboratory work	2 afternoons
Physics, laboratory work	3 afternoons

Third Term.

Calculus	5 hours
Physics	5 hours
Alternate Current Machinery	2 hours
Drawing	2 afternoons
Physics, laboratory work	3 afternoons

SPECIAL COURSE IN SURVEYING.

FIRST YEAR.

First Term.

Algebra	5 hours
English	5 hours
Geometry	5 hours
Drawing	2 afternoons
Elective	2 afternoons

Second Term.

Trigonometry	5 hours
Algebra	5 hours
Geometry	5 hours
Drawing	2 afternoons
Elective	2 afternoons

Third Term.

Algebra	5 hours
English	5 hours
Elective	5 hours
Drawing	2 afternoons
Elective	2 afternoons

SECOND YEAR.

First Term.

Surveying	3 hours
Masonry Construction	3 hours
Field Practice	3 afternoons
Drawing	2 afternoons

For further information, address

GEO. E. LADD, Director,
Rolla, Missouri.

LIST OF STUDENTS.

Graduate Department.

Name.	Course.	Postoffice.	County
Ammerman, Gertrude, A. B.	Acad.	Columbia	Boone ..
Booth, Nathaniel Ogden, B. Agr..	Agr.	Columbia	Boone ...
Cotter, William Earnest, LL. B.	Law.	Knox City.....	Knox
Du Pontot, Edwin Stanton, A. B.	Acad.	Reeds.....	Jasper...
Elwang, William Wilson, B. Ph.	Acad.	Columbia	Boone
Fleet, Robert Ryland, A. B.	Acad.	Corder.....	Lafayette
Goodson, Walter Conrad, LL. B.	Law.	New Cambria.....	Macon ...
Griffith, William Walter, B. S.	Acad.	Columbia.....	Boone ..
Hamilton, Theodore Ely, A. B. ...	Acad.	Fredonia, N. Y.	
Hatton, Claudie May, B. S.	Acad.	Columbia.....	Boone
Hawkins, Richmond Laurin, A. B.	Acad.	Maryville.....	Nodaway ...
Hogan, Charles William, E. E.	Eng.	St. Louis City.....	
House, Ralph Emerson.....	Acad.	Chamberlain, S. D.	
Irvine, George Andrew, E. E.	Eng.	Marshall.....	Saline.....
Iwert, Alvin Henry, B. L.	Acad.	Watertown, Wis.	
Knepper, Myrtle, B. L.	Acad.	Guy	Atchison
Kruse, Carl, LL. B.	Law.	Springville, N. J.	
*Lefevre, Mrs. Lelia Deane, A. B.	Acad.	Columbia	Boone ...
Lockwood, Marquis Hartwell, E. E.	Eng.	Macon City.....	Macon.....
Lotter, Henry Howell, C. E.	Eng.	Detroit, Mich.	
Malra, Thomas Isaiah, B. Agr.	Agr.	Columbia	Boone ..
Moore, Carl Manford, A. B.	Acad.	Green City.....	Sullivan
Mumford, Frederick Blackmar, MS	Acad.	Columbia	Boone ..
Norton, John Henry, Agr.	Agr.	Bible Grove.....	Scotland
Parkhurst, Charles Leonard, B. S. ...	Med.	Sweet Springs.....	Saline...
Roberts, Guy Alexander, Agr.	Agr.	St. Joseph	Buchanan
Rodhouse, Thomas Jacob, C. E.	Arch.	Columbia	Boone ..
Selsor, Mark Allen, B. S.	Acad.	Trenton	Grundy
Seward, William Henry, A. B.	Acad.	Oakridge.....	Cape Gir
Smiley, Harry Herr, A. B.	Med.	Boonville.....	Cooper ..
Steele, Ava D., A. B.	Acad.	Marshall.....	Saline ..
Strong, Charles Monroe, B. L.	Acad.	Stotesburg.....	Vernon..
Tindall, Mrs. Lucy Gentry, B. L. ...	Acad.	Columbia	Boone ..
Tyler, Elza Edward, B. S.	Med.	N. Pomona, Cal.	
Wilson, William Frank, A. B.	Acad.	Cape Girardeau ..	Cape Gir

*Deceased.

Academic Department.

Name.	Course.	Postoffice.	Count
<i>Senior Class</i>			
Anderson, John Lewis.....	A B & B S	Vandalia	Audrain ..
Arnold, Mercer	B. L.	Joplin.....	Jasper...
Barlow, Gilbert.....	A. B.	Bethany	Harrison.
Bassett, Arthur.....	A. B.	Paris	Monroe...
Deister, John Louis.....	A. B.	Harlem.....	Clay....
Elitzen, Meta Therese.....	B. S.	Washington.....	Franklin..
Ficklin, Arthur Graham.....	A. B.	Stanberry	Gentry ...
Freudenberger, Henry Clay.....	B. L.	Clarksburg.....	Monteau
Freudenberger, Norman.....	A. B.	California	Monteau..

Name.	Course.	Postoffice.	County.
Gerig, Rosalie.....	A. B.	Columbia.....	Boone.....
Gladney, Andrew Gaston.....	B. S.	Troy.....	Lincoln.....
Gray, Mary.....	B. L.	Columbia.....	Boone.....
Greene, Charles Arthur..	A. B.	Triplett.....	Charlton.....
Guitar, Emily.....	B. L.	Columbia.....	Boone.....
Halliburton, Westley.....	B. L.	Carthage.....	Jasper.....
Howard, Thos. Perry.....	A. B.	Parshley.....	Jasper.....
House, Ralph Emerson.....	B. L.	Chamberlain, S.D.	
Hunter, Lewis Linn.....	A. B.	Benton.....	Scott.....
Kleinschmidt, Rudolph.....	B. L.	St. Louis City....	
Lucas, William Cardwell.....	A. B.	Osceola.....	St. Clair.....
Maddox, Joseph Shelby.....	A. B.	Long Branch.....	Monroe.....
Moore, William Dunn.....	A. B.	St. Louis City....	
Motter, Francis Marion..	B. L.	Kirksville.....	Adair.....
Phelps, Mabel.....	B. L.	Kirkwood.....	St. Louis.....
Powell, Bessie.....	B. L.	Columbia.....	Boone.....
Quigley, William Henry.....	A. B.	Albany.....	Gentry.....
Shipley, Edith.....	A. B., B. S.	Columbia.....	Boone.....
Shipley, Sylvanus Carl.....	B. S.	Columbia.....	Boone.....
Steele, Mary Isabelle.....	B. S.	Ladonna.....	Audrain.....
Switzler, Wm F Jr.....	A. B.	Columbia.....	Boone.....
Thurston, Hollis Hendrix.....	B. L.	Woodlandville....	Boone.....
Vaughn, Earnest Vancourt....	B. L.	Columbia.....	Boone.....

—32

Junior Class.

Anthony, Hettie Marguerite.....	B. L.	Maryville.....	Nodaway.....
Ballard, Vassie.....	B. L.	St. Louis City....	
Bannister, William Daniel.....	B. S.	Monroe City.....	Monroe.....
Barnhardt, Wilford Caldwell.....	B. L.	Columbia.....	Boone.....
Becker, Amanda Fredericka.....	B. S.	St. Louis City....	
Bell, Elexious Thompson.....	B. S.	Hatch.....	Ralls.....
Bell, Virginia Cordelia.....	B. S.	Hatch.....	Ralls.....
Brossard, Cornelia Pierette.....	A. B.	Kirkwood.....	St. Louis.....
Burruss, Will Bledsoe..	B. L.	Columbia.....	Boone.....
Dimmitt, Roy.....	B. S.	Shelbyville.....	Shelby.....
Hitch, Ruth Amanda.....	B. L.	Cuba.....	Crawford.....
Jackson, Alfa Jane.....	B. L.	Chillicothe.....	Livingston..
Jenkins, Charles Aaron.....	B. L.	Longwood.....	Pettis.....
Johnson, William Sherman.....	A. B.	Tuscumbia.....	Miller.....
Kroesch, Samuel.....	B. L.	California.....	Moniteau.....
Lindsay, Helen.....	B. S.	Lockwood.....	Dade.....
Miller, Franklin.....	A. B.	Memphis.....	Scotland.....
McIntire, Rolla.....	A. B.	Mexico.....	Audrain.....
Nesbitt, Pleasant Pomeroy.....	B. S.	St. Joseph.....	Buchanan.....
Nichols, Robert Fields.....	B. L.	Columbia.....	Boone.....
Oliver, Robert Burett, Jr.....	A. B.	Cape Girardeau..	Cape Girardeau..
Robinson, Roy D.....	B. L.	Appleton City....	St. Clair.....
Robinson, Harry E.....	B. L.	Appleton City....	St. Clair.....
Scudder, William Russell.....	A. B.	Kearney.....	Clay.....
Steele, Asa George.....	B. S.	Ladonna.....	Audrain.....
Tate, Ernest.....	A. B.	Hallsville.....	Boone.....
Wagner, Laura Sophia.....	B. S.	Boonville.....	Cooper.....

—37

Sophomore Class.

Allee, Rea Haydon.....	A. B.	Olean.....	Miller.....
Alison, Claude Wallace.....	B. L.	Loneoak.....	Bates.....
Bass, Ernest Roland.....	A. B.	Steeleville.....	Crawford.....
Black, Arthur Geiger.....	B. S.	Kansas City.....	Jackson.....
Boardman, Emma.....	B. L.	Harrisonville.....	Cass.....
Bowers, William Swartz.....	B. L.	Moberly.....	Randolph.....
Braun, Frederick Augustus.....	B. L.	Raytown.....	Jackson.....
Burk, Milton Clarence.....	B. L.	Tipton.....	Moniteau.....
Caldwell, Lou Belle.....	B. L.	Slate.....	Saline.....
Catron, Thomas Kent.....	A. B.	Moberly.....	Randolph.....
Craig, James Herman.....	B. L.	Cyrene.....	Pike.....

Name.	Course.	Postoffice.	County.
Crenshaw, Charles Robert.....	B. L.	Lamar	Barton
Dashiell, Laura Henry	B. L.	Princess Ann, <i>Md.</i>	Ralls.....
Davis, Charles Burton.....	B. L.	Oakwood.	Lawrence.....
Davis, Homer Jason.....	B. L.	Miller.....	Boone.....
Dearing, Milton Matthews.....	B. L.	Columbia.. ..	Clay.....
Deppe, Charles Alexander	B. S.	Glenville.....	Miller.....
DeVilbliss, Edgar Frank.....	B. L.	Spring Garden	Adair.....
Dockery, Ethel Ardella.....	B. L.	Kirksville.	Henry.....
Duffy, Bessie.	B. L.	Clinton.	Greene.....
Favor, Ernest Howard.....	B. S.	Springfield.	Pike.....
Foster, Asa Dillard.....	A. B.	Spencersburg.	Boone.....
Fountain, James Richie.....	B. L.	Centralia.....	Linn.....
Frey, Lum Hall.....	A. B.	Marceline.....	Johnson.....
Gallaher, Leo.....	B. S.	Warrensburg	Cooper.....
Gilbreath, Ellis William.....	A. B.	Prairie Home.	Clinton.....
Green, Talitha Jennie	B. S.	Lathrop... ..	Saline.....
Groves, David Gordon.....	A. B.	Blackburn.. ..	Lincoln.....
Hamilton, Charles Mortimer.....	A. B.	Troy.....	Harrison.....
Harrison, John Scott.....	A. B.	Bethany.....	Gentry.....
Hatheway, Bishop.....	B. L.	Stanberry.....	Monroe.....
Henderson, Charles Forest.....	B. S.	Paris.	Boone.....
Hidy, Leora Mabel.....	B. L.	Columbia.....	Saline.....
Hill, Samuel Matthues	B. L.	Slater.....	Atchison.....
Hopkins, Nelson Orlando.....	B. L.	Westboro.....	St. Clair
Howell, Shrader Preston.....	B. L.	Appleton City.....	Audrain.....
Irvine, Ernest Albert	A. B.	Vandalia.....	Boone.....
Jesse, Richard Henry, Jr.....	A. B.	Columbia.....	Shelby.....
Jewett, Ernest Woodbury.....	B. L.	Shelbina.....	Audrain.....
Johnson, William Clyde.....	A. B.	Vandalia.....	Polk.....
Johnson, Oliver Thul.....	A. B.	St. Louis City... ..	Boone.....
Jones, Loren Gilmore.....	A. B.	Slagle.....	Ripley.....
Kieffer, Victor Barcroft.....	A. B.	St. Louis City... ..	Jackson.....
Marshall, Thomas Francis	A. B.	Columbia.....	Lawrence.....
Martin, William Wesley.....	B. S.	Doniphan... ..	Barton.....
Masters, Stanley Madison.....	B. L.	Kansas City.....	Gentry.....
Millsap, Charles Otho.....	A. B.	Mt. Vernon.	Linn.....
Morgan, Franklin Benjamin.....	B. L.	Lamar.....	Gentry.....
Moulton, Pearl.....	B. L.	King City.....	Nodaway.....
Mullins, Roscoe Conkling	B. L.	Linneus.	Buchanan.....
McCaslin, Strausle.....	B. L.	King City... ..	Jasper.....
McMillan, Paul Duncan.....	B. S.	Maryville.....	Nodaway.....
Nesbitt, Florence Malinda.....	B. S.	St. Joseph	Clinton.....
Newell, Anna Gray.....	A. B.	Carthage.....	Ozark
O'Connor, Tom Edward.....	B. L.	Maryville.....	Lawrence.....
Packard, Eva Lorena.. ..	B. S.	Cameron.....	Boone.....
Pearcy, Claude Otis	B. L.	Thornfield... ..	Boone.....
Pettus, William Bacon.....	B. L.	Mobile, <i>Ala.</i>	Clark.....
Potter, James Arthur.....	A. B.	Mt. Vernon.....	Shelby.....
Rabourn, Susie McDowell.....	A. B.	Columbia.....	Macon.....
Rabourn, Sara Brewer.....	A. B.	Columbia.....	Clinton.....
Ramsey, Thomas Orrin.....	B. L.	Revere.....	Boone.....
Reid, Clifford Lee.....	B. L.	Shelbina.....	Nodaway.....
Richards, Mabel May.....	B. S.	Bevier.....	Barton.....
Riley, Horace Ralph.....	B. L.	Plattsburg	Jackson.....
Rouse, Clyde.....	B. S.	Brown's Station.. ..	Boone.....
Storm, Fred E.	B. L.	Maryville... ..	Nodaway.....
Super, Irvine Paul.....	B. S.	St. Louis City.....	Boone.....
Thurman, Hal Clark.....	B. L.	Lamar	Monroe.....
Underwood, Franklin Mason.....	A. B.	Kansas City.....	Livingston.....
Vaughn, Edith.....	B. L.	Columbia.....	Boone.....
Walker, George Johnson.....	B. S.	Monroe City.....	Ralls
Wallbrum, Maurice.....	B. L.	Chillicothe	Platte.....
Welch, Howard.....	B. L.	Columbia.....	Nodaway.....
Westfall, John Jacob.....	B. S.	Perry.....	Pike.....
Willhite, Benjamin Franklin.....	B. S.	Barry.....	
Woodbury, Charles Levi.....	A. B.	Maryville.....	
Yunker, Blanche.....	B. L.	Louisiana.....	

Name.	Course.	Postoffice.	County.
<i>Freshman Class.</i>			
Alexander, Wallace.....	B. L.	Kirkville.....	Adair.....
Alexander, Samuel Thomas.....	B. L.	Gallatin.....	Davless.....
Ammerman, Joseph William.....	A. B.	Columbia.....	Boone.....
Anderson, Litburne Morris.....	B. L.	Hannibal.....	Marion.....
Baird, James Claud.....	B. L.	Redding, Iowa.....	Boone.....
Baker, Beulah Norvelle.....	B. L.		Boone.....
Barnett, Mary.....	B. L.		Boone.....
Benedict, Stephen Gano.....	B. S.		Jackson.....
Bishop, Emmett Floye.....	B. L.		Nodaway.....
Blair, Charles Albert.....	B. S.		Holt.....
Boillot, William W.....	A. B.		Jasper.....
Bowman, John Sidney.....	B. S.		Carroll.....
Bozell, James Monroe, Jr.....	B. S.		Boone.....
Bowling, Clyde Logan.....	B. L.		Barton.....
Boxley, Frederick Auselm.....	B. L.		Bates.....
Brewer, Lake.....	B. S.		Harrison.....
Broadhead, Harry Howard.....	B. S.		Boone.....
Brockman, John Alonzo.....	B. S.		Miller.....
Bruce, Thomas Ripley.....	B. L.		Audrain.....
Byrd, Paul J.....	B. S.		Livingston.....
Cable, John Gore.....	A. B.		Ralls.....
Caldwell, Robert Breckenridge.....	B. L.		Ralls.....
Cauthorn, Bessie.....	B. S.		Boone.....
Chase, George Swift.....	B. S.		Pettis.....
Chasnoff, Jacob.....	B. L.		Ray.....
Chenault, Charley Abner.....	B. L.		Boone.....
Cochel, Mary Alice.....	B. L.		Boone.....
Cochel, Robert Calvin.....	B. S.		Boone.....
Cole, Granville Malcome.....	B. L.		Jackson.....
Collins, Charles Rowland.....	B. S.		Cam.....
Conley, Helen Singleton.....	B. L.		Boone.....
Cooper, Joseph Quintle.....	B. S.		Boone.....
Cosgrove, Daniel Watson.....	B. L.		Cooper.....
Creason, Josiah Gant.....	A. B.		Boone.....
Crumbaugh, Lawrence Weldon.....	B. L.		Caldwell.....
Culbertson, Chalon Conley.....	B. L.		Lincoln.....
Davidson, Hattie Ethel.....	B. L.		Butler.....
Dearing, Frank Winchester.....	B. L.		Boone.....
Depee, Ida Belle.....	B. L.		Dade.....
Draper, Henry Edgar.....	A. B.		Boilinger.....
Drum, Edward Livingston.....	B. L.		Jackson.....
DuBois, Charles Clifford.....	B. S.		Shelby.....
Dynart, Tom Nicholas.....	B. L.		Boone.....
Edwards, Eliza Russell.....	B. L.		Gentry.....
Eyart, Blanche Earle.....	B. L.		Henry.....
Feaster, Ross Elmer.....	B. L.		Dade.....
Finley, Ralph Tilden.....	B. S.		Schuyler.....
Fogle, Claude Chester.....	B. L.		Dade.....
Foster, Arthur Joseph.....	A. B.		Henry.....
Freese, Everett.....	A. B.		Pettis.....
Gates, James Milton.....	A. B.		Pettis.....
Gentry, Charles Richard.....	B. L.		Jackson.....
Gentry, Richard White.....	A. B.		Macon.....
Gibson, James Edgar.....	B. L.		Boone.....
Goodson, William Hammack.....	B. S.		Boone.....
Gray, Nellie.....	A. B.		Dade.....
Gregory, Harry Morton.....	A. B.		Vernon.....
Griffith, Roland Buryhill.....	B. L.		Miller.....
Halcomb, Stanley K.....	A. B.		Randolph.....
Hamilton, Goldy Mitchell.....	B. L.		Randolph.....
Harvey, Ralph S.....	B. L.		
Harvey, Julia Buckner.....	B. L.		
Harvey, Frank Blakey.....	B. L.		

Na

Naves, James Patrick.....	D. L.	Danma, Texas.....	Monroe
Hawkins, George.....	B. S.	Paris.....	Pettis.....
Hayman, Rosina Clarke.....	D. L.	Houstonia.....	Pettis.....
Hicks, Andrew Jackson.....	B. S.	Forsyth.....	Taney.....
Higbee, Walter Addison.....	D. L.	Laurens.....	Schuyler.....
Hilliard, Howard Eugene.....	B. S.	Chapel Hill.....	Lafayette.....
Hilpert, Archie Luke.....	B. L.	Mt. Vernon.....	Lawrence.....
Hogan, Jesse Franklin.....	B. L.	Maryville.....	Nodaway.....
Howe, Harley Earl.....	D. S.	Lincoln.....	Linn.....
Howell, John Henry Hancock.....	D. L.	Brookfield.....	Linn.....
Ingram, Judith Dick.....	B. L.	Rothville.....	Chariton.....
Jackson, Carrie Ruth.....	B. S.	Chillicothe.....	Livingston.....
Jacobs, Berry Watson.....	B. S.	Columbus.....	Boone.....
Jenkins, Orla Orville.....	A. B.	Spring Garden.....	Miller.....
Jones, Richard Lee.....	D. L.	Bunceton.....	Cooper.....
Jordan, Pope.....	D. S.	Benton, Mo.....	
Lamm, George Denison.....	A. D.	Sedalia.....	Pettis.....
Lay, Florence.....	D. L.	Warsaw.....	Benton.....
Lipcomb, James Robinson.....	D. S.	Columbia.....	Boone.....
Lloyd, Eldon E.....	D. S.	Maryville.....	Nodaway.....
Loeb, Virgil.....	D. S.	Columbia.....	Boone.....
Lowe, Collin Alden.....	B. L.	Mokane.....	Callaway.....
Lowry, Benedict Harrison.....	B. L.	Walker.....	Vernon.....
Lutman, Benjamin Franklin.....	D. S.	Joplin.....	Jasper.....
Lyon, Alfred Hinchley.....	A. B.	Columbia.....	Boone.....
Martin, Thomas Dudley.....	D. S.	Doniphan.....	Ripley.....
Mason, Richard Roland.....	D. L.	Mexico.....	Audrain.....
Mattie, Alice Ethel.....	A. D.	Raymore.....	Camden.....
Matson, Clifton Allen.....	B. S.	Harrisonville, Ohio.....	
Miller, William Frederic.....	B. L.	Queen City.....	Schuyler.....
Moberly, Victor Thomas.....	B. L.	Humphrey.....	Sullivan.....
Montgomery, Maud Ellis.....	B. L.	Fort Scott, Kan.....	
Moore, Olin Harris.....	A. D.	Columbia.....	Boone.....
Moore, Henry Thomas.....	A. D.	Columbia.....	Boone.....
Morehead, Lucy Olive.....	D. L.	Columbia.....	Boone.....
Moss, Remeser Elliott.....	D. L.	Parvia.....	Camden.....
Moulton, Ella Lee.....	B. L.	King City.....	Gentry.....
McBaine, Richard Hiram.....	A. D.	Columbia.....	Boone.....
McCaullin, Frank James.....	B. L.	King City.....	Gentry.....
Nardin, William Thompson.....	B. L.	Vandalia.....	Audrain.....
Near, Clarence Adkins.....	D. S.	Kansas City.....	Jackson.....
Newby, Alby Kenneth.....	B. S.	Grandin.....	Carter.....
Nowell, Fannie.....	D. L.	Columbia.....	Boone.....
Nunn, Henry.....	B. L.	Maywood.....	Lewis.....
Orear, Marvin Luther.....	B. S.	Slater.....	Saline.....
Orr, Charles Houston.....	D. L.	Mt. Vernon.....	Lawrence.....
Patrick, Frances.....	B. L.	Albion, Illinois.....	
Price, Robert Beverly, Jr.....	D. L.	Columbia.....	Boone.....
Quinlan, Ernest Morgan.....	B. S.	Kansas City.....	Jackson.....
Rand, Ella.....	D. L.	Columbia.....	Boone.....
Ridgeway, George Walter.....	D. L.	Clark.....	Randolph.....
Riggs, Jephtha.....	D. L.	Crab Orchard.....	Ray.....
Robinson, Thomas Wright, Jr.....	D. S.	Macon.....	Macon.....
Rowe, Moses Truman.....	D. S.	Grain Valley.....	Jackson.....
Russell, Walter Lillian.....	B. L.	Columbia.....	Boone.....
Sanders, Samuel Murrell.....	D. L.	Campbellsville, Ky.....	
Saylor, Oliver Evans.....	A. B.	St. Louis City.....	
Searcy, Nellie Thomas.....	D. L.	Columbia.....	Boone.....
Sears, Edward Nelson.....	D. L.	Monticello.....	Lewis.....
Sebeck, Nellie Beatrice.....	B. L.	Slater.....	Saline.....
Severance, Harold Clyde.....	A. B.	Brunswick.....	Chariton.....
Sewall, Helen Alberta.....	A. B.	Farmington, Mo.....	
Shaefer, Herman Clyde.....	B. S.	Columbia.....	Boone.....
Sinclair, Frances Leona.....	A. B.	Millersburg.....	Callaway.....
Sloop, Charles J.....	D. L.	Queen City.....	Schuyler.....
Smith, William Ernest.....	B. L.	Webb City.....	Jasper.....

Name.	Course.	Postoffice.	County.
Starrett, Adda Mabel	B. L.	Shelbyville.....	Shelby.....
Steele, Charlie D	A. B.	Columbia.....	Boone
Stephens, Edwin Sydney	A. B.	Columbia.....	Boone
Stevenson, Ellis.....	A. B.	King City.....	Gentry.....
Stone, Ira Thomas Gabbert	A. B.	Columbia.....	Boone
Stump, Maggie Lou.....	A. B.	Nevada.....	Vernon.....
Tuttle, Floyd Wilkins.....	A. B.	Columbia.....	Boone
VanderVeer, William T.....	B. L.	King City	Gentry.....
Viles, Charles Walter.....	B. S.	Bolivar	Polk.....
Wade, Ross F.....	A. B.	Maryville.....	Nodaway.....
Watson, Malcolm Clyde.....	B. L.	Riggs.....	Boone
Welch, John Gunn.....	A. B.	Columbia.....	Boone
Westerhouse, Amiel Franklin.....	B. S.	Concordia	Lafayette
Whaley, Moiston Peter.....	A. B.	Albany.....	Gentry
White, Laura.....	B. L.	Warsaw	Benton
White, Robert Ernest.....	B. S.	Harrisonville.....	Cass
Willhite, Frank Vanatta.....	B. L.	Grant City.....	Worth
Williams, Roy Draffen.....	B. L.	Boonville.....	Cooper.....
Woods, Herbert Spencer	B. S.	Versailles.....	Morgan.....
Woodson, Aytch Perrin.....	B. S.	Kansas City.....	Jackson.....
Wooldridge, Osborne Jesse.....	B. L.	Boonville... ..	Cooper.....

—150

Irregular Students.

Ahrens, Anna Helen.	B. L.	Fort Smith, Ark..	
Barnhardt, Madge.....	B. S.	Columbia.....	Boone.....
Bayless, Gertrude Mabel.....	B. S.	Columbia.....	Boone
Bedford, Frances Ellz.....	A. B.	Billings.....	Christian
Bothwell, Lawrence.....	B. L.	Sedalia.....	Pettis.....
Burkhardt, Richard Willis	B. L.	Columbia.....	Boone
Cauthorn, Louisa Leah.....	B. L.	Columbia.....	Boone
Cochel, Charlotte Calvin.....	A. B.	Columbia.....	Boone
Coffing, Lucas Riley	B. S.	Kinloch	St. Louis.....
Davy, Lewis George.....	B. L.	Cincinnati, Ohio..	
Dearing, Fred Morris.....	B. L.	Columbia.....	Boone
Dyer, Sadie Virginia.....	B. L.	Lawrence, Kansas	
Evans, Nelle.....	B. L.	Columbia.....	Boone
Fisher, Julia Gamble.....	A. B.	Columbia.....	Boone
Gideon, Nelle Edith.....	B. S.	Springfield.....	Greene.....
Houck, George Jr.....	B. L.	Cape Girardeau..	Cape Girardeau ..
Hutchinson, Mrs. Katherine.....	A. B.	Columbia.....	Boone
Jaenecke, Howard.....	B. L.	Louisiana.....	Pike
Johnson, Lillie Morton.....	B. L.	Columbia.....	Boone
Kahn, Gussye.....	B. S.	St. Joseph.....	Buchanan
Kurtz, Louise Lenoir	A. B.	Columbia.....	Boone
Lamm, Philip Forsyth.....	B. L.	Sedalia	Pettis.....
Lasley, Roy Downing.....	B. L.	Shelbina.....	Shelby.....
Lawson, Lucille.....	B. L.	Columbia.....	Boone.....
Marr, John Davis	B. L.	Plattsburg.....	Clinton.....
McAlester, Berry.....	A. B.	Columbia.....	Boone.....
McBaine, James Patterson	A. B.	Columbia.....	Boone.....
McGuire, Ivie A.....	B. L.	Kirksville	Adair.....
Nolen, Eugenia Frances.....	B. L.	Paris.....	Monroe.....
Price, Perry Riley.....	B. L.	Plattsburg.....	Clinton.....
Records, Thomas Herbert.....	A. B.	Blue Springs.....	Jackson.....
Ringo, Ethel Sarah	B. L.	Kirksville.....	Adair.....
Ruenzi, Wilhametta	B. S.	Columbia.....	Boone.....
Schafer, Frederick Charles.....	B. L.	Lancaster.....	Schuyler.....
Shelby, Thomas Kelly.....	A. B.	Lexington.....	Lafayette.....
Shelton, Byrd Allen.....	B. L.	Windsor.....	Henry.....
Shumard, Oliver Garfield.....	B. S.	Ridgeway.....	Harrison.....
Somerville, Joseph Robinson.....	B. L.	Columbia.....	Boone
Stone, Sue Marie.....	B. S.	Columbia.....	Boone.....
Storm, Lena Lucille.....	B. L.	Kirksville.....	Adair.....
Vandivert, Bessie Agnes.....	B. S.	Bethany.....	Harrison.....
Welty, Perry Allen.....	B. S.	St. Joseph.....	Buchanan.....
Wright, Mattie Lute.....	B. L.	Jefferson City ..	Cole.....

—43

Name.	Postoffice.	County.
Rollins, Mrs. Ruth McCune..	Columbia.	Boone
Rothwell, Wade Hampton.....	Ashland	Boone
St. Clair, Mrs. Luella Wilcox.....	Columbia.	Boone
Salmon, Kate Letcher.....	Columbia.....	Boone
Simpson, John Homer.....	Bevier.....	Macon.....
Smith, Mrs. Kitty Iglehart.....	Columbia.....	Boone
Smith, Alfred H.....	Kirksville.....	Adair.....
Steele, Oliver Lee.....	Ladonia.....	Audrain ..
Stone, Mrs. Laura Gabbert.....	Columbia.....	Boone
Summers, John Nicholas.....	Bolckow.....	Andrew
Switzler, Mrs. Ellen Runyan	Columbia.....	Boone
Thilly, Mrs. Jessie Matthews.....	Columbia.....	Boone
Thompson, Mrs. Mary Elizabeth.....	Columbia.....	Boone
Todd, Tete... ..	Columbia.....	Boone
Turpin, Mary	Columbia.....	Boone
Unsell, Eva Myrtle.....	Caldwell, <i>Kansas</i> ...	
Vaughn, Mrs. Emma P.....	Columbia.....	Boone
Waters, Mrs. Henry Jackson.....	Columbia.....	Boone
Weeks, Mrs. Raymond.....	Columbia.....	Boone
White, Mrs. Annette Miller....	Cohocton, <i>N. Y.</i>	
White, Mrs. Katherine H.....	Columbia.....	Boone
White, Crawford Elder.	Columbia.....	Boone
Whitmer, Mrs. Helen.	Lancaster, <i>Pa.</i>	
Whitten, Mrs. Nora Todd.....	Columbia.	Boone
Wulfert, Amelia Pauline.....	Jefferson City....	Cole.

—88

Department of Education.

Name.	Postoffice.	County.
Ahrens, Anna Helen.	Fort Smith, <i>Ark.</i>....	.....
Anderson, John Lewis.....	Vandalia.....	Audrain.....
Arnold, Mercer.....	Joplin.....	Jasper.....
Baker, Beulah Norvelle... ..	Columbia.....	Boone.....
Ballard, Vassie.....	St. Louis City.....	
Bannister, William Daniel.....	Monroe City.....	Monroe.....
Barlow, Gilbert.....	Bethany.....	Harrison.....
Barnhardt, Wilford Caldwell.....	Columbia.....	Boone.....
Bartley, John William.....	Fulton.....	Callaway.....
Bassett, Arthur.....	Paris.....	Monroe.....
Bell, Virginia Cordelia.....	Hatch.....	Ralls.....
Boardman, Emma.....	Harrisonville.	Cass.....
Burruss, Sewall.....	Miami.....	Saline.....
Bush, Ernest Forrest.....	Fulton.....	Callaway.....
Cauthorn, Edward Beauford.....	Columbia.....	Boone.....
Collins, Charles Rowland.....	Strasburg.....	Cass.....
Dearing, Fred Morris.....	Columbia.....	Boone.....
Deister, John Louis.	Harlem.....	Clay.....
Dimmitt, Roy.....	Shelbyville.....	Shelby.....
Eitzen, Meta Therese.....	Washington.....	Franklin... ..
Evans, Nelle.....	Columbia.....	Boone.....
Ficklin, Arthur Graham.....	Stanberry.....	Gentry.....
Frcudenberger, Norman.....	California.....	Moniteau.....
Gray, Mary.....	Columbia.....	Boone.....
Haskins, Harriet Louise.....	North Adams, <i>Mass.</i>.....	.....
Hatton, Claudia May.....	Columbia.....	Boone.....
Howard, Thomas Perry	Parshley.....	Jasper.....
Howell, Shrader Preston.....	Appleton City.....	St. Clair.....
Iwert, Alvin Henry.....	Watertown, <i>Wisc.</i>...	.....
Jackson, Alfa Jane.....	Chillicothe.....	Livingston.....
Jenkins, Charles Aaron.....	Longwood.....	Pettis.....
Kahn, Gussye.	St. Joseph.	Buchanan.....
Kroesch, Samuel.....	California.....	Moniteau.....
Lindsey, Helen.....	Lockwood.....	Dade.....

Name.	Postoffice.	County.
Lutman, Benjamin Franklin...	Joplin.....	Jasper.....
Miller, Franklin.....	Memphis.....	Scotland.....
McConathy, Bessie Norwood.....	Columbia.....	Boone.....
Nunn, Henry.....	Maywood.....	Lewis.....
Phelps, Mabel.....	Kirkwood.....	St. Louis.....
Powell, Bessie.....	Columbia.....	Boone.....
Quigley, William Henry.....	Albany.....	Gentry.....
Scudder, William Russell.....	Kearney.....	Clay.....
Searcy, Nellie Thomas.....	Columbia.....	Boone.....
Seward, William Henry.....	Oakridge.....	Cape Girardeau.....
Sinclair, Frances Leona.....	Millersburg.....	Callaway.....
Starrett, Adda Mabel.....	Shelbyville.....	Shelby.....
Steele, Ava D.....	Marshall.....	Saline.....
Tate, Ernest.....	Hallsville.....	Boone.....
Thurston, Hollis Hendrix.....	Woodlandville.....	Boone.....
Turpin, Mary.....	Columbia.....	Boone.....
Vaughn, Earnest Vancourt.....	Columbia.....	Boone.....
<i>Teachers' Course.</i>		
Carmichael, Rhoda.....	Christopher.....	Newton.....
Carter, Ewell Martin.....	Hallsville.....	Boone.....
Dodson, William S.....	Laclede.....	Linn.....
Floyd, Monroe Al.....	Blackburn.....	Saline.....
Gregory, James Robert.....	Wakenda.....	Carroll.....
Harrison, Coleman B.....	Ridgeway.....	Harrison.....
Henderson, Minnie.....	Barry.....	Clay.....
Jones, Marguerite Chambers.....	Roanoke.....	Howard.....
Kent, Martin William.....	Osgood.....	Sullivan.....
McCaslin, Frank James.....	King City.....	Gentry.....
McCorkle, Thomas Arch.....	Van Alstyne, Texas.....	
McNeely, Archie Gasten.....	Columbia.....	Boone.....
Neet, Claude A.....	Seneca.....	Newton.....
Parks, Zella.....	Calhoun.....	Henry.....
Rawlings, Brown Roberts.....	Rocheport.....	Boone.....
Schulte, William Philip.....	Oregon.....	Holt.....
Stuard, Clara.....	Cameron.....	Clinton.....
Tyler, Earle Graves.....	Hamburg.....	St. Charles.....
Whitmore, Jas. Franklin.....	Higbee.....	Randolph.....
Wise, Laura Sarah.....	Wentzville.....	St. Charles.....

Law Department.

Name.	Postoffice.	County.
<i>Graduate Class.</i>		
Cottey, Wm. Earnest.....	Knox City.....	Knox.....
Goodson, Walter Conrad.....	New Cambria.....	Macon.....
Kruse, Carl.....	Springville, N. Y.....	
<i>Senior Class.</i>		
Askren, Oscar Otto.....	Bolivar.....	Polk.....
Atchison, Ben Allen.....	Gower.....	Clinton.....
Blevans, James Rusk.....	Moundville.....	Vernon.....
Bulgin, Richard Gould, Jr.....	Fort Smith, Ark.....	
Burke, Eugene Marshall.....	Laclede.....	Linn.....
Cloud, Riley Ransom.....	Kansas City.....	Jackson.....
Coleman, Robert Lafayette, Jr.....	Columbia.....	Boone.....
Conrad, Henry Spotwood.....	Prairie Hill.....	Charlton.....
Conran, James Francis.....	High Hill.....	Montgomery.....
Corley, Thomas Emmett.....	St. Paul.....	St. Charles.....
Creason, Goodwin.....	Columbia.....	Boone.....
Cunningham, Joe.....	Boonville.....	Cooper.....
Davis, James Addison.....	Strasburg.....	Cass.....
Doll, Alva Chester.....	Hamilton.....	Caldwell.....

Name.	Postoffice.	County.
Edmonds, Raymond Saufley.....	Miami.....	Saline.....
Fowler, Aubrey Melvin.....	Montreal.....	Camden.....
Ganson, Louis Stevens.....	Kansas City.....	Jackson.....
Gideon, Thomas Harrison.....	Springfield.....	Greene.....
Hunter, Silas Oak.....	Moberly.....	Randolph.....
Johnson, Fred M.....	Joplin.....	Jasper.....
Johnson, Crosby Chain.....	Hamilton.....	Caldwell.....
Kleinschmidt, Rudolph.....	St. Louis City.....	
Kramer, John.....	Carrollton.....	Carroll.....
Lafferty, Albert.....	Middletown.....	Montgomery.....
* Mills, Henry Winslow.....	Prairie Home.....	Cooper.....
Mitchell, Orestes.....	St. Joseph.....	Buchanan.....
Morgan, Henry Winfred.....	Watson.....	Atchison.....
Morris, David Esdres.....	Lancaster.....	Schuyler.....
McEuen, Wilson Henry.....	Bushnell.....	Barton.....
McMillen, Robt. Nelson, Jr.....	Marceline.....	Linn.....
McNatt, John L.....	Indian Springs.....	McDonald.....
Napton, Percy.....	Anaconda, Mont.....	
Nelson, Eugene William.....	Taylor.....	Marion.....
Russell, Antoine Edward.....	Spokane, Wash.....	
Scott, Haywood Bennett.....	Rolla.....	Phelps.....
Steele, Charles Fuller.....	Mexico.....	Audrain.....
Thompson, Harry.....	Mound City.....	Holt.....
Utley, Lee.....	Miami.....	Saline.....
Wagner, George Ernest.....	Middletown.....	Montgomery.....
Wilson, William Frank.....	Cape Girardeau.....	Cape Girardeau.....
Woodside, Gratia Evelyn.....	Salem.....	Dent.....
*Deceased.		-41

Junior Class.

Bain, Homer Judson.....	Trenton.....	Grundy.....
Bass, Hugh Glenn.....	Columbia.....	Boone.....
Birdseye, Henry Fred.....	Nevada.....	Vernon.....
Bolin, Edgar Louis.....	Forsyth.....	Taney.....
Bowling, Ralph William.....	Lamar.....	Barton.....
Camron, Elisha Franklin.....	Nevada.....	Vernon.....
Clark, Charles Francis.....	Mexico.....	Audrain.....
Cleary, Frederick Charles.....	Chillicothe.....	Livingston.....
Clubb, James Knox.....	Clubb.....	Wayne.....
Davidson, Ernest Evans.....	Liberty.....	Clay.....
Davis, Walter Garton.....	Windsor.....	Henry.....
Douglass, Robert Sidney.....	Malden.....	Dunklin.....
Duncan, Frederic Austin.....	Columbia.....	Boone.....
Dunn, James Earl.....	Ulrich.....	Henry.....
Frost, Frank Jefferson.....	Grubville.....	Jefferson.....
Goodson, Paul.....	Carrollton.....	Carroll.....
Goul, Frank Delbert.....	Unionville.....	Putnam.....
Hall, John Chappellear.....	Marceline.....	Linn.....
Halstead, Egbert Fritzlen.....	Lawson.....	Ray.....
Harnage, Jesse Lee.....	Tablequah, I. T.....	
Harvey, John Bennett.....	Nevada.....	Vernon.....
Haw, James Moore.....	Farmington.....	St. Francois.....
Henson, Charles Leonard.....	Galena.....	Stone.....
Higginbotham, Rufus Lee.....	Louisville.....	Lincoln.....
Houck, Giboney.....	Cape Girardeau.....	Cape Girardeau.....
Hulett, Frederic Donald.....	Columbia.....	Boone.....
Jennings, Arthur.....	Centralia.....	Boone.....
Johnson, Bert.....	Webb City.....	Jasper.....
Lockwood, Barlytte Marshall.....	Columbia.....	Boone.....
Long, Thomas A.....	Mound City.....	Holt.....
Marsh, Charles Stewart.....	Brunot.....	Wayne.....
Martin, Clarence A.....	Bronaugh.....	Vernon.....
Meador, Joseph Frank.....	Patterson.....	Wayne.....
Meyer, Don C.....	Mound City.....	Holt.....
Minteer, Harry Wallace.....	Chillicothe.....	Livingston.....

Name.	Postoffice.	County.
Moore, George Prewitt	Edinburg	Grundy. ..
Moore, George Herbert	Quincy, Ill.	Howell
Mullinas, Frederick Charles	Willow Springs	Ray
McAlester, William Berry	McAlester, T. T.	Pettis
McCollough, Perry	Lawson	Schuyler
McGruder, Mark Austin	Hughesville	Dade
O'Briant, Lewis Irvin	Lancaster	Caldwell
Osborne, Shelby E.	Arcola	Marion
Parman, John	Polo	Audrain
Rendlen, Charles Ernest	Hannibal	Dunklin
Rice, Charles Elberne	Mexico	Schuyler
Rice, Flavius Josephus	Vincit	Boone
Rockwood, Joseph Erasmus	Limtown	Scotland
Shaw, Russell Aubrey	Columbia	Caldwell
Smoot, Hudson V.	Memphis	St. Francois
Van Note, Charles	Hamilton	Wayne
Waide, William Dubart	Farmington	Lawrence
Ward, Robert Lafayette	Clubb	Jefferson
West, Arthur Lorenzo	Ft. Smith, Ark.	Montgomery
White, John McCafferty	Marionville	
Williams, Clyde	Grubville	
Wilson, Oscar Augustus	Wellsville	
<i>Special Students.</i>		
Hill, Adam	Independence	Jackson
Holloway, Hosea Hollis	Kirkville	Adair
Jennings, Frank Elias	Seymour	Webster
Owens, Proctor Knott	Harrisonville	Cass
Ransdell, Frank Elvert	Filley	Cedar

Medical Department.

Name.	Postoffice.	County.
<i>Senior Class.</i>		
Jackson, Clarence Martin	Columbia	Boone
Mikel, Henry Franklin	Columbia	Boone
Searcy, Anna Beauregard	Woodlawn	Monroe
White, Ernest Cleveland	Cohocton, N. Y.	
<i>Junior Class.</i>		
Austine, Charles Willette	Hallsville	Boone
Bishop, William Thomas	Herndon	Saline
Parkhurst, Charles Leonard	Sweet Springs	Saline
Reed, Horace	Netherland, Tenn.	
Robinson, Robert Roy	Hallsville	Boone
Smiley, Harry Herr	Boonville	Cooper
Sneed, Carl Miller	Centralia	Boone
Turner, William Henry	Centralia	Boone
<i>Sophomore Class.</i>		
Boxmeyer, Charles Herbert	Holden	Johnson
Clark, George Gerdwood	Center	Ralls
Cole, William Marvin	Sedalia	Pettis
Guthrie, Claude Charles	Columbia	Boone
Miller, James Abston	Columbia	Boone
Wright, Charles Oscar	Poplar Bluff	Butler

Name.	Postoffice.	County.
<i>Freshman Class.</i>		
Anderson, George Minor.....	Fayette	Howard.....
Bedford, Stephen Vincent.....	Columbia.....	Boone.....
Bonnot, Remigius Edmond August.....	Bonnot's Mill.....	Osage.....
Bowman, Harry Edmond.....	Wathena, <i>Kans.</i>	
Campbell, Henry.....	Maitland.....	Holt.....
Carrico, Charles Aloysius.....	Monroe City.....	Monroe.....
Carryer, Carl Hadden.....	Columbia.....	Boone.....
Cassity, George Henry.....	Purdin.....	Linn.....
Coffey, Matthew Lee.....	Downing.....	Schuyler.....
Colley, Elijah Augustus.....	Plattsburg.....	Clinton.....
Crockett, James Addison.....	Stanberry.....	Gentry.....
Draper, Neal McClain.....	Cookville, <i>Tenn.</i>	
Hagood, Albert Sidney.....	Ft. Gibson, <i>I. T.</i>	
Hogan, Reginald Rockwood.....	Webster Groves.....	St. Louis.....
Hollister, Wilber Leeper.....	DeWitt.....	Carroll.....
Howard, David Fount.....	Brookfield.....	Linn.....
Johnson, Charles Albert.....	Barry, <i>Ill.</i>	
Johnson, Carroll Allen.....	Columbia.....	Boone.....
Kaps, Frederick Otto.....	Oshkosh, <i>Wis.</i>	
Meredith, Oscar Orlando.....	Cowgill.....	Caldwell.....
Montgomery, John Solomon.....	Milan.....	Sullivan.....
Moore, Thornton Basley.....	Edinburg.....	Grundy.....
McClelland, Everett Slater.....	Norwood, <i>Ill.</i>	
McMillan, William Taylor.....	Neponset, <i>Ill.</i>	
Nauman, Oscar Walton.....	Craig.....	Holt.....
Nichols, Arlee Isbell.....	Columbia.....	Boone.....
Ogilvie, Roy.....	Charleston.....	Mississippi.....
Payne, Harry Clancet.....	Paris.....	Monroe.....
Phillips, Samuel Henry.....	Hicks City.....	Jackson.....
Robinson, Edward Evert.....	Butler.....	Bates.....
Russler, Jacob J.....	Osage City.....	Cole.....
Saults, Arthur Harlow.....	Knobnoster.....	Johnson.....
Shellaberger, Cyrus William Wheeler.....	Hamilton.....	Caldwell.....
Simmons, Verne Mevric Monroe.....	Grant City.....	Worth.....
Spencer, Clay.....	DeKalb.....	Buchanan.....
Tolson, Sohn Depew, Jr.....	Fayette.....	Howard.....
Tyler, Elza Edward.....	N. Pomona, <i>Cal.</i>	
VanDerslice, Edwin Rank.....	Cheney, <i>Neb.</i>	
Walker, John C.....	Neosho.....	Newton.....
Weeks, William Brinson.....	Rich Hill.....	Bates.....
Welch, William Alexander.....	Macon City.....	Macon.....
Wells, Clyde Hayter.....	Fayette.....	Howard.....
Willier, Albert Francis.....	Springfield.....	Greene.....

—43

College of Agriculture and Mechanic Arts.

Name.	Course.	Postoffice.	County.
<i>Graduate Class.</i>			
Booth, Nathaniel Ogden, B. Agr.	Agr.	Columbia.....	Boone.....
Mairs, Thomas Isaiah, B. Agr.	Agr.	Columbia.....	Boone.....
Norton, John Henry, B. Agr.	Agr.	Bible Grove.....	Scotland.....
Roberts, Guy Alexander, B. Agr.	Agr.	St. Joseph.....	Buchanan.....

—4

A. SCHOOL OF AGRICULTURE.

Name.	Postoffice.	County.
<i>Junior Class.</i>		
Howard, Walter Lafayette.....	Griffin	Christian.....
Willoughby, Claude Leake.....	Columbia.....	Boone.....
<i>Sophomore Class.</i>		
Chamberlin, George William.....	Springfield.....	Greene.....
Ferguson, James Taylor, Jr.....	Mokane.....	Callaway.....
Frampton, Alfred Clement.....	St. Louis City.....	
Hong, William Bert.....	Mountain Grove.....	Wright.....
Holmes, Edward Charles.....	Summit, N. J.....	
Jesse, William Hall, Jr.....	Litwalton, Va.....	
Koch, Albert Adlebert.....	Creve Coeur.....	St. Louis.....
Latham, Will Talifareo.....	Latham.....	Moniteau.....
Mitchell, Donna Iza.....	Columbia.....	Boone.....
McAlester, Berry.....	Columbia.....	Boone.....
Parkhurst, Albert Early.....	Sweet Springs.....	Saline.....
<i>Freshman Class.</i>		
Adams, Earl Cranston.....	Linneus.....	Linn.....
Bartley, John William.....	Fulton.....	Callaway.....
Berry, Edward	Mary's Home.....	Miller.....
Brunjes, Ernest August.....	Warsaw.....	Benton.....
Bush, Ernest Forrest.....	Fulton.....	Callaway.....
Call, Jason Logan.....	Halbeck.....	Buchanan.....
Chase, George Swift.....	St. Louis City.....	
Combs, Louis.....	Halbeck.....	Buchanan.....
Crouch, Andrew Monroe, Jr.....	Columbia.....	Boone.....
Doughty, Job Marcus.....	Farmington.....	St. Francois.....
Duncan, Haden.....	Millersburg.....	Callaway.....
English, William.....	Bacon.....	Moniteau.....
Fulenwider, Lloy Caleb.....	Sikeston.....	Scott.....
Groves, David Gordon.....	Blackburn.....	Saline.....
Hall, Ben Reynolds.....	Kansas City.....	Jackson.....
Hampton, John Blatchley.....	Centralla.....	Boone.....
Harris, Albert.....	Dye.....	Platte.....
Harvey, William Thomas.....	Prairie Hill.....	Chariton.....
Hite, Ernest Lee.....	New Lebanon.....	Cooper.....
Kincannon, Fred.....	Granby.....	Newton.....
Kraft, Walter Mitchell.....	Webster Groves.....	St. Louis.....
Laughlin, Fred.....	Foster.....	Bates.....
Lewellen, Charles P.....	Goss.....	Monroe.....
Miller, Frank Julius.....	Chamois.....	Osage.....
Moree, Edward Emanuel.....	Baker.....	St. Clair.....
Mullinax, Charles Isaac.....	Princeton.....	Mercer.....
McClain, Thomas Conroy.....	Weston.....	Platte.....
Rhodes, Edward Dean.....	Webster Groves.....	St. Louis.....
Simms, Bertha Ellen.....	Doniphan.....	Ripley.....
Smith, Clarence.....	Foster.....	Bates.....
Spalding, Walter James.....	Moselle.....	Franklin.....
Strickland, George William.....	Spokane.....	Callaway.....
Woodruff, Harry Abner.....	Omaha.....	Putnam.....
Wren, James Adpins.....	Platte City.....	Platte.....
<i>Irregular Student.</i>		
Craig, Sam Oliver.....	Cyrene.....	Pike.....

Short Winter Course in Agriculture and Horticulture.

(Agr=Agriculture, H=Horticulture.)

Name.	Course.	Postoffice.	County.
Anderson, Clyde Collins.....	H.	Henderson, Ky. .	Clay
Anderson, Thomas Gosney.....	Agr.	Kearney.....	Carter
Arthur, Hiram David.....	H.	Hunter.....	Vernon
Beattie, Howard	Agr.	Zodiac.....	Lafayette.....
Berry, Leslie Lee	Agr.	Quitman, Ga.	Linn
Bruns, John Ferdinand	Agr.	Concordia	Cole
Cassity, Franklin Elliott.	Agr.	Purdin.....	Vernon.....
Clarke, Wright	Agr.	Jefferson City....	Franklin.. ..
Crawmer, William Edgar.....	Agr.	Moundville	Cape Girardeau ..
Dahl, William Christian.....	Agr.	Kohl	(N. J.)
Davis, Charley Aubrey.....	Agr.	Fruitland.....	Boone.....
Eckhart, Harry Smith.....	Agr.	Newfoundland. ..	Atchison.....
Fountain, Willis Thomas	Agr.	Centralia.....	Webster.....
Fuelling, Lue.	Agr.	Tarkio.....	Chariton.. ..
Garner, Joseph Robert	Agr.	Niangua.....	Marion
Gatzemeier, August John.....	H.	Wien.....	Johnson.....
Hallenberger, Herman Bender ..	Agr.	Hannibal	Cooper.....
Hesse, Edward	Agr.	Holden	Gasconade.....
Hite, Ernest Lee.	Agr.	New Lebanon.....	Gasconade.....
Holmes, Edward Charles, Jr.,....	Agr.	Summit, N. J.....	Newton.....
Kemper, Edward.....	H.	Hermann	Andrew.....
Kimmel, Fred.....	Agr.	Hermann	Daviess.....
Kincannon, Fred	Agr.	Granby.....	Boone.....
Kirtley, James Clifford.....	H.	Savannah.....	Daviess
Koger, Earl	Agr.	Gallatin	Boone.....
Kurtz, Frank Allen.....	H.	Columbia	Daviess
Lee, Homer Thomas.....	Agr.	Winston.....	Linn
Lunt, George Myron.....	Agr.	Talntor, Iowa...	Lawrence.....
Mason, Charles Hubert.....	(*)	Brookfield	Buchanan.....
Miller, Arch	Agr.	Verona	Howell
Moore, John Morgan	Agr.	Frazer	Holt.....
McElroy, Jas. Herbert.....	Agr.	Lamoni, Iowa ..	Chariton.....
Petersen, Martin.	Agr.	Petersburg, Col...	Jackson.....
Reynolds, Auston.....	H.	Mountainview....	DeKalb.....
Roecker, Frank Levi	Agr.	Oregon.....	Cooper.....
Schuring, Joseph William	Agr.	Wien.....	Franklin
Shawhan, Walter Randolph.....	Agr.	Lonejack	Boone
Shipp, Charles Edward.....	Agr.	Stewartsville	Webster
Stephens, Harvey Bunce	Agr.	Bunceton	
Storm, Henry Galbraith.....	Agr.	Windsor, Ill.....	
Stumpe, Ernest.....	Agr.	Washington	
Thom, William Herrick	H.	Mlonk, Ill.....	
Vandiver, William Clark	Agr.	Columbia.....	
Whittenburg, Thomas Porter.....	Agr.	Niangua	

—44

* Never matriculated—taken sick.

C. SCHOOL OF MECHANIC ARTS.

Name.	Postoffice.	County.
<i>Junior Class.</i>		
Castellanos, Liopold Justo.....	Mexico City, Mexico	St. Louis.....
Coleman, William Tyler.....	Monarch	Cooper.....
Gilbreath, Ellis William.....	Prairie Home.....	Polk
Lushbaugh, Erith Evert.....	Fair Play.....	Jefferson
Pernoud, Frank Emile.	DeSoto.....	
Sisson, Stanley	Charleston, S. C....	
Somerville, Joseph Robinson.....	Columbia	Boone
White, Charles Joseph	Columbia	Boone

—8

Name.	Postoffice.	County.
<i>Sophomore Class.</i>		
Biggs, Everett Elmo	Ashland.....	Boone.....
Boman, Elbert Courtland	Roads.....	Carroll.....
Craig, William	New Haven.....	Franklin.....
Cramer, William Walker.....	Bunceton.....	Cooper.....
Feaster, William James Whitley	Windsor.....	Henry.....
Jeffreys, Oliver Anderson.....	Weiser, Idaho.....	
Koken, Walter Frank.....	St. Louis City.....	
Mullins, William Sherman.....	Omaha.....	Putnam.....
Nelson, Wade Hampton.....	Newark.....	Knox.....
Penter, Eli Everett.....	Ashland.....	Boone.....
Sankay, Robert Maxwell.....	Salem.....	Dent.....
Waters, Roy Melvin.....	Vandalia.....	Andrain.....
Wilcox, David Bradford.....	Ashland.....	Boone.....
Wright, Frank H.....	Richland.....	Pulaski.....
<i>Freshman Class.</i>		
Adler, Leonhard, Jr.....	St. Jacob, Ill.....	
Bruce, Richard Alexander.....	Skinner.....	Andrain.....
Callison, Sterling Price	Windsor.....	Henry.....
Cannell, Arthur	Halton.....	Callaway.....
Church, Dean.....	Ottumwa, Iowa.....	
Collier, George Emerald	Mokane.....	Callaway.....
Couch, Humbert Cyrus.....	Moselle.....	Franklin.....
Craven, Wesley Reader.....	Licking.....	Texas.....
Daubon, Nicolas.....	San Juan, Puerto Rico.....	
Davis, Richard Lee	Westport.....	Jackson.....
Gamble, Lewis McFarlane	Mexico.....	Andrain.....
Gates, Daniel Taylor.....	Montross.....	Henry.....
Hartman, Marcellus Thomas.....	Higginville.....	Lafayette.....
Hartung, Paul August.....	Carrollton.....	Carroll.....
Henley, James Arthur.....	Joplin.....	Jasper.....
Hoecker, Charles Henry	St. Louis City.....	
Ingram, Judith Dick.....	Rothville.....	Chariton.....
Johnston, Fred Bates.....	Fort Smith, Ark.....	
Lipcomb, James Robinson.....	Columbia.....	Boone.....
Martin, Delbert Andrew	Bates City.....	Lafayette.....
Mertwether, Frank Edwin	Aberdeen.....	Pike.....
Meyer, James Henry.....	Mound City.....	Holt.....
Oshausen, William.....	St. Louis City.....	
Peters, Albert Newton.....	Crane.....	Stone.....
Riesbol, Edward.....	Redbird.....	Gasconade.....
Riggs, William Andrew.....	Houston.....	Texas.....
Rubio, Oswaldo.....	Puerto Principe, Cuba.....	
Shepherd, Frank Youse.....	Hannibal.....	Marion.....
Sisson, Myron Henry Jr.....	Charleston, S. C.....	
Tegtmeyer, Louis George.....	St. Louis City.....	
Vaughan, Richard.....	Lexington.....	Lafayette.....
Wilson, Clyde William.....	Montrose.....	Henry.....
Wilson, Arthur Bell.....	Montrose.....	Henry.....
Winkelmeyer, Edwin Julius.....	St. Louis City.....	
Yant, George Stoddy.....	Clark City.....	Clark.....
Zuendt, Robert Ernest Adelbert.....	Jefferson City.....	Cole.....
<i>Special Students.</i>		
Ablers, John Frederick.....	St. Louis City.....	
Baldwin, Dixie.....	Platte City.....	Platte.....
Hart, Dottie Stafford	Montrose.....	Henry.....
McConathy, Bessie Norwood.....	Columbia.....	Boone.....
<i>Irregular Student.</i>		
Schweitzer, Julia Helen	New York City, N. Y.....	

D. SCHOOL OF ENGINEERING.

Name.	Course.	Postoffice.	County.
<i>Graduate Class.</i>			
Hogan, Charles William.....	B. E.	St. Louis City.....	
Irvine, George Andrew.....	B. E.	Marshall.....	Saline.....
Lockwood, Marquis Hartwell.....	B. E.	Macon City.....	Macon.....
Lotter, Henry Howell.....	C. E.	Detroit, Mich.....	
—4			
<i>Senior Class.</i>			
Blackwell, Paul Alexander.....	C. E.	Columbia.....	Boone.....
Corrigan, George Washington.....	C. E.	Harrisonville.....	Cass.....
Gaines, Edward Cornelius.....	B. E.	Slater.....	Saline.....
Lyman, Forest Shepard.....	B. E.	Kansas City.....	Jackson.....
Marshall, Urban Serenus.....	C. E.	St. Joseph.....	Buchanan.....
Peper, Elmer Carl.....	B. E.	St. Louis City.....	
Ruffner, Charles Shumway.....	B. E.	Palmyra.....	Marion.....
Underhill, Dillen.....	M. E.	Democracy, Ohio.....	
—8			
<i>Junior Class.</i>			
Bond, Judson Baker.....	C. E.	Victor, Montana.....	
Cooper, Isaac Benjamin.....	C. E.	Columbia.....	Boone.....
Fry, Leslie Monroe.....	C. E.	Tipton.....	Moniteau.....
Gans, Roy Carl.....	C. E.	Columbia.....	Boone.....
O'Rear, Lenoir Wilkes.....	B. E.	Columbia.....	Boone.....
Pierce, Lonnie John.....	B. E.	Rockport.....	Atchison.....
Powers, Joe.....	C. E.	Paris.....	Monroe.....
Shepard, Edward Lewis.....	C. E.	Joplin.....	Jasper.....
Shipley, Sylvanus Carl.....	M. E.	Columbia.....	Boone.....
Smith, Edwin Dwight.....	B. E.	Maitland.....	Holt.....
Thomas, Claude Holden.....	C. E.	Albany.....	Gentry.....
Wilson, James Newton.....	M. E.	Molino.....	Audrain.....
Winter, William Neal.....	B. E.	Greenville, Miss.....	
—13			
<i>Sophomore Class.</i>			
Barrett, Arthur.....	C. E.	Elwood.....	Greene.....
Brundige, John Alvin.....	B. E.	Adrain.....	Bates.....
Don Carlos, Henry Carter.....	B. E.	Clarksburg.....	Moniteau.....
Gay, Harry Clauder.....	M. E.	Bevier.....	Macon.....
Hauser, Orville Rice.....	B. E.	Richmond.....	Ray.....
Heck, Kirby Scott.....	B. E.	Columbia.....	Boone.....
Houx, Samuel Bailey.....	C. E.	Warrensburg.....	Johnson.....
Jeffries, Paul Burch.....	B. E.	Columbia.....	Boone.....
MacLay, Edgar Gleim.....	C. E.	Tipton.....	Moniteau.....
Morehead, George Lawrence.....	M. E.	Columbia.....	Boone.....
Peeler, James Earnest.....	M. E.	White's Store.....	Howard.....
Rautenstrauch, Walter.....	B. E.	Sedalia.....	Pettis.....
Robertson, Gay Aufrecht.....	M. E.	Gallatin.....	Davies.....
Salmon, John McClure.....	C. E.	Cann.....	Barry.....
Smith, Earl Brenton.....	M. E.	Cambria, Iowa.....	
Stillwell, Tom Kennan Price.....	B. E.	Sedalia.....	Pettis.....
Super, Irvine Paul.....	C. E.	St. Louis City.....	
Troy, George Conrad.....	C. E.	Slater.....	Saline.....
Welch, Austin Hubbard.....	M. E.	Columbia.....	Boone.....
Williams, Thomas Albert.....	C. E.	Moberly.....	Randolph.....
Wood, Charles Wayne.....	B. E.	Boles.....	Franklin.....
—21			
<i>Freshman Class.</i>			
Brandenburger, Leo.....	B. E.	Chillicothe.....	Livingston.....
Bush, Roy Givens.....	C. E.	Columbia.....	Boone.....
Castellanos, Leopold Justo.....	M. E.	Mexico City, Mex.....	
Cockrell, Carl Prichard.....	C. E.	Princeton.....	Mercer.....

Name.	Course.	Postoffice.	County.
Craig, Tom J.	M. E.	Lebanon.....	Laclede ..
Ellis, John Richard.....	C. E.	Pilot Grove.....	Cooper ..
Fessenden, Edwin Allan.....	M. E.	St. Louis City...	Boone ..
Gordon, Hugh.	C. E.	Columbia.....	Boone ..
Hammack, James Albert.	C. E.	Pocahontas, <i>Miss.</i>	
Hammack, John Samuel.....	C. E.	Pocahontas, <i>Miss.</i>	
Hann, George Washington.....	C. E.	Bates City.....	Lafayette.
Harris, William Woodson.	E. E.	Rich Hill.....	Bates....
Hax, George Ludwig, Jr.	E. E.	Kansas City.....	Jackson.....
Hibbard, Frederick Cleveland.....	E. E.	Canton	Lewis ..
Hulse, William Earl.....	E. E.	Marceline.....	Linn.....
Idle, McErvin.	C. E.	Leavenworth, <i>Kas.</i>	
Jackson, Charles Thomas.....	C. E.	Miami.....	Saline ..
Jacobs, David,.....	C. E.	Columbia.....	Boone ..

Name.	Postoffice.	County.
Nelson, Wade Hampton.....	Newark.....	Knox.....
Nolan, Mrs. Marie Lilly.....	Columbia.....	Boone.....
Pettijohn, James Worrell.....	Brookfield.....	Linn.....
Phelps, Mrs. Asenath A.....	Kirkwood.....	St. Louis.....
Rodhouse, Thomas Jacob.....	Columbia.....	Boone.....
Sisson, Myron Henry, Jr.....	Charleston, S. C.....	
Waller, Paul Parker.....	Hannibal.....	Marion.....
Westlake, Dixie Llewellyn.....	Columbia.....	Boone.....
White, Mrs. Katherine H.....	Columbia.....	Boone.....
Willoughby, Claude Leake.....	Columbia.....	Boone.....

-18

School of Mines.

Name.	Postoffice.	County.
<i>Graduate Students.</i>		
Gottschalk, Victor Hugo.....	St. Louis City.....	
Hatchett, Roger Hanson.....	New Florence.....	Montgomery.....
Tayman, Joseph Francils.....	Lebanon.....	Laclede.....
Taylor, Joshua Howard.....	Abingdon, Ill.....	
Perkins, Fred Hough.....	Kansas City.....	Jackson.....

-5

Names.	Course.	Postoffice.	County.
<i>Senior Class.</i>			
Chamberlain, Santiago.....	M. E.	Monterey, Mex..	
Drenan, Ralph W. W.....	M. E.	Kansas City.....	Jackson.....
Fach, Charles Albert.....	M. E.	St. Louis.....	
Fernandez, Abraham.....	M. E.	Monterey, Mex..	
Frazier, Isaac P.....	M. E.	Rolla.....	Phelps.....
Garcia, John Adrian.....	M. E.	St. Louis, City...	
Jamison, Claude Egan.....	M. E.	Rolla.....	Phelps.....
Weigel, William Melvin.....	M. E.	Memphis, Tenn..	
<i>Junior Class.</i>			
Barber, Frank S.....	M. E.	Kansas City.....	Jackson.....
Beyer, Frank B.....	M. E.	Philadelphia, Pa..	
Bowie, Alexander R.....	M. E.	Gallup, N. Mex..	
Buckby, DeNard W.....	M. E.	Philadelphia, Pa..	
Cox, Kathrine.....	G. S.	West Plains.....	Howell.....
Draper, James C.....	M. E.	Lebanon.....	Laclede.....
Flitz, John C H.....	C. & M.	Lynn, Mass.....	
Garrett, J Ellis.....	G. S.	Maryville.....	Nodaway.....
Hanley, Herbert R.....	M. E.	Chicago, Ill.....	
Hannah, Harry Darton.....	M. E.	Greentown.....	Lafayette.....
Koerberlin, Frederic.....	M. E.	Butte, Mont.....	
Lund, Robert R.....	M. E.	White Oaks, N. M.	
Luther, Walter W.....	M. E.	St. James.....	Phelps.....
Newton, Harry E.....	C. & A.	Denver, Colo.....	
Olmstead, Geo. L.....	C. & M.	Kansas City.....	Jackson.....
Powell, Walbridge H.....	M. E.	Rolla.....	Phelps.....
Reid, John Weir.....	M. E.	Memphis, Tenn..	
Rolufs, Rufus T.....	M. E.	Clemintine.....	Phelps.....
Stauber, Ignatius J.....	M. E.	Brookfield, Kan..	

-8

Name.	Course.	Postoffice.	County.
Walker, John P.....	M. E.	St. Charles	St. Charles.....
Wallace, Hubbe R.....	M. E.	Webb City.....	Jasper.....
Watkins, Joseph C.....	M. E.	Ennis, <i>Texas</i>	
Wilson, Albert Dyke.....	M. E.	Kansas City.....	Jackson.....
—23			
<i>Sophomore Class.</i>			
Anderson, Andrew.....	C. & A.	Denver, <i>Colo</i>	
Barber, Edwin L.....	M. E.	Kansas City.....	Jackson.....
Brady, Leon L.....	M. E.	Kansas City.....	Jackson.....
Brown, Bruce H.....	M. E.	Troy, <i>Ill</i>	
Brucher, Louis.....	M. E.	Rolla.....	Phelps.....
Christie, Louis J.	C. & A.	Anaconda, <i>Mont</i> ..	
Christman, W. F.....	M. E.	Chicago, <i>Ill</i>	
Collev, Hylton.....	C. & A.	Aukland, <i>New Zealand</i>	
Fay, A H.	M. E.	Bisbee, <i>Arizona</i> ..	
Gonzalez, E. P.....	M. E.	Guadalajara, <i>Mex</i>	
Greenidge, L. M.....	M. E.	Barbadoes, <i>W. Ind</i>	
Hall, J. L.....	M. E.	Fruita, <i>Golo</i>	
Hauber, Mathias, Jr....	C. & A.	Grant City.....	Worth.....
Holman, Thomas H.....	C. E.	Caledonia....	Washington
Keene, Walter McA.....	M. E.	Denver, <i>Colo</i>	
Koken, W. T., Jr.....	C. & M.	St. Louis.....	
Leavett, T. S.....	M. E.	Bolivar.....	Polk.....
Leivy, Pat Ben.....	M. E.	East St. Louis, <i>Ill</i> ..	
Leipsner, F W.....	M. E.	Kansas City..	Jackson
May, Lawrence.....	M. E.	St. Louis City....	
Martinez, Carlos E.....	M. E.	Saltillo, <i>Mex</i>	
McMahon, Wm. J.....	M. E.	Butte, <i>Mont</i>	
Morris, Edward J.....	M. E.	Rolla.....	Phelps.....
Mortland, E. A.....	M. E.	Hardin, <i>Ill</i>	
Mortland, Herbert.....	M. E.	Hardin, <i>Ill</i>	
Nemnich, Otto H.....	C. E.	Florissant.....	St. Louis.....
Norton, Benj. N..	M. E.	Sedalia.....	Pettis.....
Phariss, Lulu	G. S.	Rolla..	Phelps.....
Pickles, John L....	M. E.	DeSoto.....	Jefferson.....
Rex, Harry N.....	M. E.	Creston, <i>Iowa</i>	
Rogers, Chas. B.....	M. E.	Neosho.....	Newton.....
Roy, Chas.....	Surv'g	Glen Roy, <i>Ohio</i> ...	
Schaberg, Benj. F.....	M. E.	Clayton.....	St. Louis.....
Southgate, John M.....	C. & A.	Rolla.....	Phelps.....
Trask, Samuel, M.....	M. E.	Memphis, <i>Tenn</i> ...	
Webb, Ray H.....	C. & A.	Sioux City, <i>Iowa</i> ..	
Whitaker.....	M. E.	Gardens, <i>Colo</i>	
Wright, N. F.....	C. & A.	Carthage....	Jasper.....
Villareal, Francisco.....	M. E.	Calinas Vic., <i>Mex</i> .	
—39			
<i>Freshman Class.</i>			
Alexander, R. C.....	M. E.	Maryville.....	Nodaway.....
Barrare, Charles.....	M. E.	Webster Groves...	St. Louis.....
Baker, Wm. E.....	M. E.	Aurora	Lawrence.....
Ballard, Samuel G....	G. S.	Waynesville	Pulaski.....
Burger, Sylvia.....	G. S.	St. James.....	Phelps.....
Carpenter, R. W.....	M. E.	St. James.....	Phelps
Chestnut, Mathew, Jr....	M. E.	Webster Groves...	St. Louis.....
Conrads, Ralph A.....	M. E.	Trenton.....	Granby.....
Daily, Cornelius M.....	Elec.		Phelps.....
Douglas, Harvey.....	M. E.	Aurora.....	Lawrence.....
Duncan, Walter E.....	C. & A.	Relfe.....	Dent.....
Emry, L. B.....	M. E.	Carthage.....	Jasper.....
Evans, Jas. F.....	C & A.	Kansas City	Jackson.....
Fish, Fred T.	M. E.	Davenport, <i>Iowa</i> ..	
Fontain, Louis W.....	M. E.	Brunswick.....	Chariton..
German, Frank A.....	C. & A.	Rolla.	Phelps.....

Name.	Course.	Postoffice.	County.
Ibson, Thomas L.....	M. E.	Webster Groves..	St. Louis.....
Ill, Wm. H.....	G. S.	Rolla.....	Phelps.....
ower, C. E.....	M. E.	Rolla.....	Phelps.....
eller, Robert.....	C. & A.	Rolla.....	Phelps.....
lanick, W. J.....	M. E.	St. Louis City.....	Phelps.....
erbert, Fred, Jr.....	M. E.	Rolla.....	Phelps.....
inkle, Chas. T.....	M. E.	Butte, <i>Mont.</i>	Phelps.....
loyle, Chas., Jr.....	M. E.	St. Louis City.....	Phelps.....
loyle, Geo.....	M. E.	St. Louis City.....	Phelps.....
amison, Earl J.....	M. E.	Rolla.....	Phelps.....
cellog, Scott P.....	C. E.	Leavenworth, <i>Kan.</i>	Worth.....
err, Everett.....	C. E.	Grant City.....	Jasper.....
riekhaus, Leon.....	C. & M.	Joplin.....	Jasper.....
Crutsch, Carl.....	M. E.	St. Louis City.....	Buchanan.....
Lewis, Berton K.....	M. E.	Sioux City, <i>Iowa.</i>	Buchanan.....
Logan, L. S.....	M. E.	St. Joseph.....	Buchanan.....
Marks, Constant R.....	M. E.	Sioux City, <i>Iowa.</i>	Buchanan.....
Marston, Ralph W.....	C. & A.	Argentine, <i>Kan.</i>	Buchanan.....
McBain, Wilson.....	C. & M.	McBain, <i>Mich.</i>	Buchanan.....
McCaw, Wm.....	M. E.	Rolla.....	Phelps.....
McCrae, Chas. R.....	M. E.	Rolla.....	Phelps.....
McTighe, Wm. A.....	M. E.	Memphis, <i>Tenn.</i>	Barton.....
Mellor, Chas.....	Elec.	Liberal.....	Phelps.....
Mitchell, Phelps.....	M. E.	Rolla.....	Phelps.....
Moore, H. C.....	M. E.	St. James.....	Phelps.....
Morgan, J. H.....	M. E.	Rolla.....	Phelps.....
Morris, E. A.....	M. E.	Brookfield.....	Linn.....
O'Keefe, Edward C.....	M. E.	El Paso, <i>Texas.</i>	Linn.....
Peters, W. J.....	M. E.	St. Louis City.....	Phelps.....
Pool, Frank B.....	M. E.	Rolla.....	Phelps.....
Reinoehl, Clyde O.....	M. E.	Rolla.....	Phelps.....
Roesler, Herbert H.....	M. E.	Dallas, <i>Texas.</i>	Phelps.....
Ruhle, R. L.....	M. E.	Butte, <i>Mont.</i>	Phelps.....
Scott, Louis L.....	C. & A.	Rolla.....	Phelps.....
Smith, Lillie.....	G. S.	Rolla.....	Phelps.....
Stern, Jos.....	C. & A.	Rolla.....	Phelps.....
Turner, Walter G.....	M. E.	Springfield.....	Greene.....
Walsh, Francis H.....	M. E.	Gilbertsville, <i>Mass.</i>	Phelps.....
Welch, James L.....	M. E.	St. Louis City.....	Phelps.....
Wrisberg, Chas. G.....	M. E.	St. Louis City.....	St. Louis.....
Ward, James H.....	C. & A.	Webster Groves.....	St. Louis.....

—57

Special Students.

Baughman, Claude ..	Chem.	Rolla.....	Phelps.....
Blanchard Olga ..	Drawing.	Shrewsbury.....	St. Louis.....
Cox, Lois.....	.....	West Plains.....	Howell.....
Curtis, Leslie V.....	C. & A.	St. Louis City.....	Howell.....
DeDanato, Florian.....	C. & A.	St. Louis City.....	Howell.....
Dickerson, Bennie.....	.....	Rolla.....	Phelps.....
Donnelly, Elma.....	.....	Rolla.....	Phelps.....
Everts, Grace.....	.....	St. Louis City.....	Phelps.....
Foster, Henry B.....	.....	Rolla.....	Phelps.....
Forlata, Vincent R.....	C. & A.	St. Louis City.....	Phelps.....
Fraizer, Beulah.....	.....	Rolla.....	Phelps.....
Fort, Edward L.....	C. & A.	Rolla.....	Phelps.....
Fisher, Eldon J.....	.....	Joplin.....	Jasper.....
Harrison, Benj. H.....	.....	Rolla.....	Phelps.....
Heller, Jessie.....	.....	Rolla.....	Phelps.....
McRae, Minnie Wood.....	.....	Rolla.....	Phelps.....
Millard, Homer.....	.....	Houston.....	Texas.....
Mitchell, Maude B.....	.....	Glen Roy, <i>Ohio.</i>	Texas.....
Roy, Robert D.....	.....	.....	.....
Rolufs, Elizabeth.....	.....	Clementine.....	Phelps.....
Schulze, Agnes.....	.....	Vetschau, <i>Germany.</i>	Phelps.....
Schulze, Eugene.....	.....	Vetschau, <i>Germany.</i>	Phelps.....

Name.	Course.	Postoffice.	County.
Seay, Virginia.....		Salem.....	Dent.....
Scott, Ethel.....		Rolla.....	Phelps.....
Powell, Francis.....		Rolla.....	Phelps.....
Short, Rosa.....		Rolla.....	Phelps.....
Stuart, J. Marion.....		Relfe.....	Dent.....
Staton, Robt. A.....		Rolla.....	Phelps.....
Thomas, P. M.....		Rolla.....	Phelps.....
Taylor Sophia Donnelly.....		Abingdon, <i>Ill.</i>	
Valenzuela, Alphonso A.....		Bagato, <i>Columbia</i>	
Wedell, Franklin M.....		Rolla.....	Phelps.....
<i>Academic.</i>			
German, Mabel.....		Rolla.....	Phelps.....
Hunt, James William.....		Salem.....	Dent.....
Kline, Anna.....		Rolla.....	Phelps.....
Petrigilo, Bessie M.....		Rolla.....	Phelps.....

Summer School.

(L.=Latin; Gr.=Greek; G.=German; Fr.=French; M.=Mathematics; E.=English;
 B.=Biology; P.=Physics; S.=Shopwork; H.=Horticulture; Sp.=Spanish;
 Hist.=History; C.=Chemistry; Histol.=Histology; T.=Technique;
 Ec.=Economics; Mor.=Morphology.)

Name.	Studies.	Postoffice.	County.
Ahlens, John Frederick.....	Hist., C., G. & S.	St. Louis City.....	
Alt, Charles Franklin.....	E., Hist., P. & S.	Norborne.....	Carroll.....
Amaden, Minnie Lois.....	L. & E.	Carthage.....	Jasper.....
Anderson, John Lewis.....	Fr.	Vandalia.....	Audrain.....
Anthony, Robert.....	G. & B.	Columbia.....	Boone.....
Arnold, Mercer.....	Ec., E. & Fr.	Joplin.....	Jasper.....
Arthur, Sylvester Irvin.....	L., E., M. & H.	Union City, <i>Ind.</i>	
Baker, Lillian Alberta.....	B., E., M. & H.	Carthage.....	Jasper.....
Balthis, Laura Virginia.....	E.	Huntsville.....	Randolph.....
Barlow, Gilbert.....	E. & Ec.	Bethany.....	Harrison.....
Bassett, Arthur.....	L., C., P. & S.	Paris.....	Monroe.....
Bassett, Daniel Horace.....	M. & Fr.	Appleton City.....	St. Clair.....
Beasley, Hattie.....	Hist.	Willow Springs.....	Howell.....
Bell, Joseph Elton.....	E. & Hist.	Hamburg, <i>Iowa</i>	
Berry, Mary Thomas.....	E. & B.	Sweet Springs.....	Saline.....
Biffer, Mary C.....	Hort. & S.	Carthage.....	Jasper.....
Black, Arthur Geiger.....	Ec. & E.	Kansas City.....	Jackson.....
Blackwell, Paul Alexander.....	M. & E.	Columbia.....	Boone.....
Bolin, Edgar Lewis.....	L.	Cypress.....	Harrison.....
Boman, John Sidney.....	Fr., Histol. & P.	Roads.....	Carroll.....
Booher, Ella.....	E.	Webb City.....	Jasper.....
Boon, Sally Knox.....	L. & E.	Carthage.....	Jasper.....
Boyd, John Orville.....	B. & L.	Louisiana.....	Pike.....
Bradshaw, Mrs. Margaret R.....	E. & G.	Brookfield.....	Linn.....
Bradsher, Earl.....	L., Hist. & E.	Clifton Hill.....	Randolph.....
Brown, Rolla.....	L. & C.	Appleton City.....	St. Clair.....
Bryan, Mary Winnifred.....	S.	Carthage.....	Jasper.....
Burgher, Sylvia.....	Hist. & E.	Rolla.....	Phelps.....
Busch, Ella Adeline.....	E., Hist. & P.	Washington.....	Franklin.....
Bush, Andrew C.....	Hist. & E.	Columbia.....	Boone.....

Names.	Studies.	Postoffice.	County.
Cochel, Mary Alice.....	E., L. & M.	Columbia.....	Boone.....
Coffing, Lucas Riley.....	E. & M.	Kinloch.....	St. Louis.....
Coleman, William Tyler.....	G., Fr. & C.	Monarch.....	St. Louis.....
Coleman, Frank B.....	C. & B.	Forestell.....	St. Charles.....
Cooper, Isaac Benjamin..	M. & Sp.	Columbia.....	Boone.....
Couch, Benjamin Sheridan...	B. & L.	Knobnoster.....	Johnson.....
Craig, James Herman..	G.	Cyrene.....	Pike.....
Crenshaw, Anne Ward.....	B.	Springfield.....	Greene..
Crump, Rosa.....	L., Fr. & Hort.	Lancaster.....	Schuyler.....
Cunningham, Helen Bird.....	Hort. & S.	Joplin.....	Jasper.....
Davis, Theeta Catherine.....	E. & L.	Brookfield.....	Linn.....
Delano, Fannie Alice..	E., B. & P.	Webster Groves..	St. Louis.....
Dilworth, Clarence Cooper...	Hist., E., P. & S.	Joplin.....	Jasper.....
Dimmitt, Roy.....	C. & T.	Shelbyville.....	Shelby.....
Dossey, Effie.....	E.	Moberly.....	Randolph.....
Dowis, Albert J.....	L. & Gr.	Oak Grove.....	Jackson.....
Doyle, Wm. Otis.....	L. & C.	Huntsville.....	Randolph..
Doyle, Luther Ulmon.....	Hist.	Moberly.....	Randolph....
Drace, William Silas.....	L.	Keytesville.....	Chariton.....
Drinkard, Enoch Marvin.....	Gr., P. & S.	Kirksville.....	Adair.....
DuBois, Charles Clifford.....	L., Ec., M & P.	Kansas City ..	Jackson.....
Dunn, James Earl.....	Gr.	Urich.....	Henry.....
Elliott, Edwin.....	Hist. & C.	Moberly.....	Randolph ..
Ellis, Jewett Pugh.....	P. & S.	New Florence...	Montgomery..
Emberson, Richard Huff.....	E. & S.	Columbia.....	Boone.....
Erickson, Nettie Maud.....	G.	Indianola, Iowa..	
Fewsmith, Joy.....	Hist., Hort. & Ec	Columbia.....	Boone.....
Fletcher, John Kent.....	B. & P.	Alma.....	Lafayette....
Flood, Sallie Rochester..	E.	Columbia..	Boone.....
Flynt, Wm. Richard.....	L.	Hallsville.....	Boone.....
Ford, Frederick Harvey.....	Hist. & B.	Lockwood..	Dade.....
Foster, Maud.....	B., Hist. & Fr.	Memphis.....	Scotland..
Foster, Asa Dillard.....	E., B. & G.	Spencersburg.....	Pike.....
Fountain, James Richie.....	L. & B.	Centralla.....	Boone.....
Gans, Roy Carl.....	M.	Columbia.....	Boone.....
Ganson, Louis Stevens.....	Ec., Fr., M. & E.	Kansas City.....	Jackson.....
Gates, James Milton..	C. & Gr.	Montrose.....	Henry.....
Gerig, Rosalie.....	L. & G.	Columbia.....	Boone.....
Gladney, Andrew Gaston.....	E. & B.	Troy.....	Lincoln.....
Glasgow, Roy.....	L. & C.	Fort Scott, Kan..	
Glover, Lynn.....	Hist.	Hams Prairie.....	Callaway. ...
Golmen, Max.....	Histol.	Kansas City.....	Jackson.....
Gordon, Daisy Lenore.....	E. & Gr.	Columbia.....	Boone ..
Gordon, J. Matt.....	G.	Bolivar.....	Polk.....
Graham, Flora May.....	Hist. & Ec.	Warrensburg.....	Johnson.....
Gray, Mary.....	G. & M.	Columbia.....	Boone.....
Gregory, Harry Morton.....	L.	Columbia.....	Boone.....
Gregory, James Robert.....	L.	Wakenda.....	Carroll... .
Green, T. Jennie.....	L. & B.	Lathrop.....	Clinton.....
Haas, Stanley M.....	Hist., C., P. & S.	Albany.....	Gentry.....
Hayler, Jephtha Lee ..	L., G. & Fr.	Red Oak.....	Lawrence....
Halcomb, Stanley K.....	L. & Gr.	Ellis.....	Vernon.....
Hale, Mrs. Louise.....	E.	Bethany... ..	Harrison.....
Hale, James Roddy.....	L.	Bethany.....	Harrison.....
Hamilton, Charles Mortimer..	P.	St. Louis City...	
Harvey, Lida.....	Hist. & E.	Kansas City.....	Jackson.....
Harvey, Alice.....	Hist. & E.	Piedmont.....	Wayne.....
Hatheway, Bishop.....	Gr., Ec. & Fr.	Stanberry ..	Gentry.....
Hauhart, H. Herman.....	E., B. & S.	Ballwin.....	St. Louis.....
Hauser, Orville Rice.....	Fr. & M.	Richmond.....	Ray.....
Hegnauer, Leonard, Jr.....	B. & Ec.	Prairie City ..	Bates.....
Herrenleben, Henry.....	B. & P.	Jamestown.....	Moniteau.
Hicks, Andrew Jackson.....	G. & Hort.	Forsyth.....	Taney.....
Higgins, Homer A.....	E. Ec. & P.	Harris.....	Sullivan.....
Hill, James A.....	B. & C.	Plattsburg.....	Clinton.....
Hill, Homer Allin.....	B. E. & P.	Maple Grove.....	Jasper.....

Name.	Studies.	Postoffice.	County.
Hitchborn, Chas. Henry.....	L. & Hist.	Knobnoster.....	Johnson.
Hollister, Wilbur Leeper.....	B.	DeWitt.....	Carroll.
Hook, James Arthur.....	M.	Columbia.....	Boone.
Hospes, Mrs. Cecelia Lizette.	C. & B.	St. Louis City..	
House, Ralph Emerson.....	L. G. & F.	Chamberlain, S.D.	
Houx, Samuel Bailey ..	M. & S.	Warrensburg.....	Johnson
Howard, Thomas Perry.....	E.	Carthage.....	Jasper
Hull, James Willard.....	G.	Grant City.....	Worth.
Humphreys, James Clarence...	E.	Guthrie.....	Callaway
Hunter, Lewis Linn	Fr.	Benton.....	Scott
Hutchinson, Mrs. Kath. Ventres	G.	Columbia.....	Boone
Ingold, Louis.....	C. & P.	Wyaconda.....	Clark..
Jackson, Carrie Ruth.....	C. & Fr.	Chillicothe	Livingston
Jesse, Richard Henry, Jr	Hort.	Columbia.....	Boone.
Johnson, Elnora.....	Ec. & Histol.	Maitland.....	Holt..
Johnston, Eva.....	Fr.	Columbia.....	Boone
Jones, Berta C.....	E. & Ec.	Sims.....	Livingston
Jones, Edward Seward... ..	L., B. & Hort.	Bevier.....	Macon
Kirk, John Robert.....	P. & S.	Columbia.....	Boone.
Kirk, Robert Lawrence.....	L., B., Fr. & S.	Columbia.....	Boone.
Kirk, Todd	L., G. & S.	Columbia.....	Boone
.....	B.	Stanberry	Gentry
.....	E.	Louisiana.....	Pike.
.....	Hist. & E.	Piedmont	Wayne.
.....	E. & Ec.	Knobnoster.....	Johnson
.....	L., C. & G.	Creve Coeur.....	St. Louis
.....	L. & Hist.	Columbia.....	Boone
.....	L. & Hist.	Columbia.....	Boone
.....	E.	Kansas City.....	Jackson.
.....	Hort.	Winona.....	Shannon..
.....	M. & Hort.	Elmwood.....	Jackson.
.....	S. & P.	Jerico.....	Cedar.
.....	L. & Gr.	Mokane.....	Callaway
.....	P.	Tarkio.....	Atchison
.....	Hist., E. M. & S.	Bingham.....	Carroll..
.....	L. & Fr.	Long Branch.....	Monroe.
.....	Fr. & Hort.	Columbia.....	Boone.....
.....	Fr. & Gr.	Columbia.....	Boone.
.....	P. & B.	Wheatland.....	Hickory ..
.....	C.	Doniphan.....	Ripley ...
.....	M. & G.	Bowling Green...	Pike.
.....	Hist. & C.	Mound City.....	Holt.....
.....	E. & B.	Eldorado Springs.	Cedar.....
.....	Hist. E. Hort. & G.	Kansas City	Jackson ..
.....	E. & B.	Oak Grove.....	Jackson.
.....	C.	Columbia.....	Boone
.....	L.	Queen City.....	Schuyler .
.....	C.	Columbia.....	Boone.....
.....	Hort.	Columbia.....	Boone
.....	L. & E.	Edinburg.....	Grundy....
.....	P.	Sedalia.....	Pettis.....
.....	G.	Sedalia.....	Pettis
.....	L., B. & P.	Union.....	Franklin..
.....	E. & B.	Canton.....	Lewis.....
.....	E., Ec. & G.	Labadie.....	Franklin ..
.....	L.	Columbia.....	Boone
.....	Gr.	Columbia.....	Boone
.....	E. & B.	Ozark.....	Christian ..
.....	Fr. & Ec.	Kirksville.....	Adair.....
.....	P.	Columbia.....	Boone.....
McAlester, James.....	L.	Columbia.....	Boone.....
McAlester, Berry.....	Fr.	Columbia.....	Boone

Name.	Studies.	Postoffice.	County.
McNew, Sallie.....	Hist. & E.	Keytesville	Chariton.....
Newell, Emily Jane.....	Ec. & E.	Carthage	Jasper
Nowlin, Mildred Anna.....	G.	Columbia	Boone
O'Halloran, Katheryn.....	Hort. & B.	St. Louis City.....	
Oliver, William Lewis.....	L. & E.	Huntsville	Randolph.....
O'Rear, Miranda Allen.....	C. & L.	Sweet Springs....	Saline.....
O'Rear, Lenoir Wilkes.....	M.	Columbia	Boone
Overall, Adele.....	Fr.	St. Louis City.....	
Owen, Ethel.....	M. & G.	St. Louis City.....	
Patterson, Mrs. Mattie.....	E., B., Fr. & Hort	Springfield.....	Greene
Patterson, Belle.....	Hist. & E.	Odessa.....	Lafayette.....
Peters, Albert Newton	L. & E.	Crane.	Stone
Petree, Martha.....	Ec. E. & M.	Oregon.....	Holt
Phelps, Mabel.....	Fr.	Kirkwood	St. Louis.....
Pierce, Lonnie John.....	M.	Rockport	Atchison.....
Pierce, Burkella	E.	Appleton City	St. Clair
Potter, Peter.....	P.	Columbia.....	Boone
Powell, Bessie.	L., Ec. & G.	Columbia.....	Boone.....
Powers, Joe.....	M.	Paris.....	Monroe.....
Pratt, Esther Jane.....	E.	Carthage	Jasper
Pyle, Dora A.....	L., E. & M.	Osceola.	St. Clair....
Quigley, Wm. Henry.....	Fr.	Albany	Gentry
Records, Thomas Herbert.....	E.	Blue Springs- . .	Jackson
Reed, Elmer Ellsworth	Hort. & S.	Chillicothe.....	Livingston . . .
Renfrow, Thos. Owen.....	P.	Steelville	Crawford.....
Rice, Flavius Josephus.....	L.	Kennett	Dunklin
Richardson, Burt Parker	E., C., M. & S.	Windsor.....	Henry
Riggs, Jephtha.....	P. & L.	Crab Orchard....	Ray.....
Risch, Julia Elsbeth.....	P. & S.	Bobring	St. Louis
Roberts, Guy Alexander.	Hort. & G.	St. Joseph	Buchanan.
Robeson, James Andrew.....	B.	Kearney	Clay
Robinson, John Beasley.....	L. & Hist.	Diamond.....	Newton
Rocheford, Rose Ella.....	L., E. & Hort.	Columbia	Boone.....
Rocheford, Louise	L. & E.	Columbia.....	Roone
Rockwood, Joseph Erasmus...	L.	Jimtown	Schuyler.....
Rollins, Frank Bingham.....	Fr.	Columbia	Boone
Rose, Vernon J.....	Ec. & E.	Newton, Kan.....	
Ruffner, Chas. Shumway	M. & P.	Palmyra	Marion
Searcy, Anna Beauregard.....	C. & B.	Woodlawn... . .	Monroe.....
Sears, Stella Augusta.....	E.	Huntsville	Randolph.....
Shaefer, Jean Augusta	Fr.	Columbia.....	Boone
Shaefer, Herman Clyde.....	L. & Gr.	Columbia.....	Boone.....
Shepard, Edward Lewis.....	M., C. & P.	Joplin.....	Jasper
Sheppard, Charles Clinton....	Ec., E. & M.	Grandin	Carter
Shipley, Sylvanus Carl.....	C. & S.	Columbia.	Boone
Shipley, Edith.....	E., Histol, M, Fr.	Columbia.....	Boone
Short, Bertie May.....	E., B. & S.	Springfield.....	Greene.....
Siegenthaler, Wm.....	E. & B.	Papinsville.....	Bates.....
Simpson, Albert Dulaney.. . .	Hist.	Charleston.....	Mississippi.....
Sinclair, Margaret.....	Hort.	Columbia.....	Boone.....
Sizemore, George Sidney.. . .	Hist. & C.	Sinkin	Shannon....
Sloop, Charles J.....	L.	Queen City.....	Schuyler.....
Smith, Orville Adniroum.....	P. & G.	Vandalia.....	Audrain
Smith, Edwin Dwight.....	M. & Sp.	Maltland.....	Holt
Speer, Mrs. Lola L.	M. & Hort.	Joplin	Jasper
Stamper, Hiram N.....	C.	Utica.	Livingston.....
Starrett, Adda Mabel.....	L.	Lancaster	Schuyler.....
Steele, Oliver Lee.....	G.	Laddonia	Audrain
Steele, Mary Isabelle.....	C. & B.	Laddonia	Audrain
Steele, Asa George.....	L., Gr. & Fr.	Laddonia.....	Audrain.....
Stevens, Wyandotte James.....	Hort.,	Carthage.	Jasper.....
Stoke, J. Walker.....	C. & B.	Olden.....	Howell.....
Storms, James Woods.....	C. & B.	Webb City.	Jasper.....
Stout, Selatie Edgar.....	E. & B.	Chillicothe.	Livingston.
Stumberg, Bernhardt Kurt....	B.	St. Charles.	St. Charles.
Sweet, Arthur T.	P. & S.	Curryville.. . . .	Pike.....

Name.	Studies.	Postoffice.	County
Tankersly, Jasper Newton ..	Ec., E. & G.	Lutesville.....	Bollinger
Thomas, Claude Holden	M.	Altany.	Gentry. .
Thompson, Gertrude.....	E., P. & G.	Tarkio	Atchison ..
Thompson, Charles D.....	E. & L.	Kansas City.....	Jackson.
Thul, Hulda Marie.....	Fr. & S.	St. Louis City.....	
Turrentine, Richard Joshua.	E. & Hist.	Marionville.....	Lawrence.
Turrentine, Carrie.....	Hist. & E.	Marionville.....	Lawrence
Tuttle, Isaac R.....	Hist., E. & P.	Columbia	Boone
Tyler, Earle Graves.....	L. & E.	Hamburg.....	St. Charles.
Vaeth, Joseph Anthony.....	Gr., B. Fr. & P.	Ste. Genevieve.....	Ste. Genevieve.
Van Neman, Loula	Histol. B. & Hort.	Carthage	Jasper
Varner, Calla	E.	Union Star	DeKalb. .
Waddill, Lila	Ec. & E.	Windsor.....	Henry
Walters, Wm. Wade	L.	Jefferson City.....	Cole.....
Waltz, Oscar Newton	E. & C.	Carterville.....	Jasper...
Wampler, Lydia Alice.....	L. & G.	Knobnoster	Johnson.....
Waters, Henry Jackson.....	Fr. & G.	Columbia	Boone.....
Watson, Sallie E. A.....	Histol., Mor., G.	Webster Groves.....	St. Louis. .
Westrope, Sadie	Ec. & Hist.	Chillicothe	Livingston..
Whealdon, Albert D.....	C., G. & S.	Caldwell, <i>Okla.</i>	
Wheeler, Edwin B.	P.	Kansas City.....	Jackson.....
White, James Ulysses.....	L. & C.	Patterson.....	Wayne.....
White, Mildred.....	P.	Columbia.	Boone.....
Whitmore, James F.....	L. & E.	Higbee	Randolph.
Whitten, Mrs. Nora Todd.....	Hort.	Columbia.....	Boone.....
Wilkinson, John Walter	Gr.	Paul's Valley, <i>I. T.</i>	
Williams, Thomas Albert	M.	Moberly.....	Randolph.
Williams, Claibe G.....	E. & C.	Moberly.....	Randolph..
Willoughby, Claude Leake...	Hort. & G.	Columbia.....	Boone.
Winders, Charles Henry.....	Ec.	Columbia.	Boone
Winders, James Calvin.....	L., E., P. & S.	Callao.....	Macon
Winter, William Neal	Fr. & P.	Greenville, <i>Miss.</i>	
Withers, Myra.....	Hist. & E.	Piedmont.....	Wayne.....
Wolf, Frederic W.....	E. & C.	Elmer.....	Macon....
Wood, Wasner Logan	L.	Bolckow.....	Andrew.....
Woodford, Benj. Franklin.	L., E. & P.	Marionville.	Lawrence.....
Wulfert, Amelia Pauline.....	G.	Columbia.....	Boone

Summary.

I. Enrollment by Departments.

I. GRADUATE:	85	VII. A. AND M. COLLEGE:	
Total	85	(a) <i>Agriculture.</i>	
II. ACADEMIC:		Graduate	4
Seniors	32	Third Year	2
Juniors	27	Second Year	11
Sophomores	78	First Year	34
Freshmen	150	Specials	1
Specials	88	Short Course (Agriclt.) ..	26
Irregular	48	Short Course (Horticult.) ..	8
Total	416	Summer School	20
III. EDUCATION:		Total	126
Regular	51	(b) <i>Mechanic Arts</i>	63
Teachers' course	20	(c) <i>Architecture</i> ..	18
Total	71	(d) <i>Engineering.</i>	
IV. LAW:		Graduate ..	4
Graduate	3	Seniors ..	8
Seniors ..	41	Juniors ..	13
Juniors ..	57	Sophomores ..	21
Specials ..	6	Freshmen ..	52
Total ..	106	Irregular ..	1
V. MEDICAL ..	61	Total ..	99
VI. MILITARY SCIENCE AND		VIII. SCHOOL OF MINES (Rolls):	
TACTICS ..	200	Graduate	5
		Seniors ..	8
		Juniors ..	23
		Sophomores ..	20
		Freshmen ..	57
		Specials ..	32
		Academic	4
		Total ..	168

II. Enrollment in Courses.

(a) Academic (Columbia).		Mechanical Engineering..	18
A. B. Course	78	Electrical Engineering ..	38
B. L. Course	138	(c) (Rolls.)	
B. S. Course	72	Mining Engineering	100
Irregular ..	43	Civil Engineering	6
Special ..	88	Chemistry & Metallurgy ..	24
Taking two courses	2	General Science ..	4
(b) Engineering (Columbia).		Academic and Special..	34
Civil Engineering	43		

III. Enrollment in Studies.

(a) Columbia.

Agriculture	109
Architecture	13
Bacteriology	7
Book-keeping & Stenography ..	108
Chemistry	387
Classical Archaeology	50
Drawing	142
Elocution	108
Engineering	99
English	552
Entomology	44
Geology and Mineralogy	89
Germanic Languages	259
Greek	105
History	244
Economics	118
Horticulture	91
Latin	247

Pathology	15
Pedagogy	1
Philosophy	24
Physics	218
Physiology	19
Romance Languages	25
Shop-work	213
Veterinary Science	8
Zoology	22

(b) Rolla.

Chemistry (and laboratory) ..	125
Drawing	167
Engineering	157
English	57
Mathematics	126
Mining and Metallurgy	127
Modern Languages	123
Physics	115
Physical Laboratory	40

VII. Counties Represented in the University.

Adair	9	Lewis	4
Andrew	8	Lincoln	4
Atchison	7	Linn	17
Audrain	18	Livingston	14
Barry	1	McDonald	1
Barton	11	Macon	11
Bates	8	Madison	1
Benton	8	Marion	9
Bollinger	2	Mercer	2
Boone	214	Miller	7
Buchanan	12	Mississippi	2
Butler	2	Moniteau	10
Caldwell	7	Monroe	12
Callaway	15	Montgomery	6
Camden	2	Morgan	1
Cape Girardeau	6	Newton	0
Carroll	10	Nodaway	12
Carter	8	Osage	2
Cass	10	Ozark	1
Cedar	8	Pettis	15
Chariton	11	Phelps	51
Christian	3	Pike	10
Clark	8	Platte	5
Clay	9	Polk	6
Clinton	10	.....	2
Cole	5	.....	8
Cooper	18	.....	7
Crawford	3	.....	18
Dade	7	.....	5
Daviess	4	.....	8
DeKalb	2	.....	6
Dent	6	.....	9
Dunklin	8	.....	3
Franklin	10	.....	1
Gasconade	8	.....	21
Gentry	15	.....	19
Greene	10	.....	14
Grundy	6	.....	6
Harrison	10	.....	2
Henry	16	.....	2
Hickory	1	.....	7
Holt	13	.....	2
Howard	4	.....	5
Howell	7	.....	2
Jackson	43	Texas	4
Jasper	86	Vernon	11
Jefferson	4	Washington	1
Johnson	11	Wayne	8
Knox	8	Webster	8
Laclede	5	Worth	5
Lafayette	10	City of St. Louis	40
Lawrence	14		

Number of counties represented (including city of St. Louis)..... 108
 Number of counties not represented 12

VIII. States, Territories and Foreign Countries.

Alabama	1	Nebraska	1
Arizona	1	New Jersey	1
Arkansas	5	New York	1
California	1	Ohio	1
Colorado	5	Oklahoma	1
Georgia	2	Pennsylvania	1
Idaho	1	South Carolina	1
Illinois	17	South Dakota	1
Indiana	1	Tennessee	1
Indian Ter.	4	Texas	1
Iowa	12	Virginia	1
Kansas	10	Washington	1
Kentucky	2	Wisconsin	1
Louisiana	1	New Mexico	1
Maine	1	Mexico	1
Maryland	2	Cuba	1
Massachusetts	5	West Indies	1
Michigan	2	Puerto Rico	1
Mississippi	3	Columbia	1
Missouri	1008	Germany	1
Montana	7	New Zealand	1

Total represented 2

DEGREES CONFERRED.

By the University (not including honorary degrees) during its history:
(E. E.—Electrical Engineer, M. E.—Mechanical Engineer, Min.
E.—Mining Engineer.)

A. B. 370	M. S. 53	†B. D. 14	C. E. 10
B. S. 253	†M. L. 8	LL. B. 66	†T. E. 3
B. L. 133	†Ph. M. 5	M. D. 426	E. E. 3
†Ph. B. 23	†A. D. M. 1	LL. M. 9	Min. E. 3
†A. D. B. 7	B. P. 147	B. Agr. 37	M. E. 1
A. M. 101	†N. G. 12	M. Agr. 3	Ph. D. 1

Total number of degrees granted 2542
Deduct for names counted more than once (persons taking two or more
degrees) 440
Total number of individuals receiving degrees up to January
1900 2102

†Degrees no longer offered.

3. *Degree of Bachelor of Science in Electrical Engineering (B. S.)*

Albert Upp Brandt, cum laude.

Loyd Lewis.

Orville Hume Turner, cum laude.

Roy Henry Pinkley.

William Kaiser Freudenberger.

Ralph Waldo Robinson.

George Andrew Irvine.

4. *Degree of Bachelor of Science in Mechanical Engineering (B. S.)*

College of Agriculture and Mechanic Arts.**1. Degree of Bachelor of Science in Agriculture (B. S. in Agr.).**

John Henry Norton.

2. Degree of Bachelor of Agriculture (B. Agr.).

Guy Alexander Roberts.

Normal Department.**Diplomas and Life Certificates.**John Crockett Edwards, *cum laude*.

John Kramer.

Bertha Alice Greer, *cum laude*.

(B. L., West. Reserve Univ., '98.)

Mary Kline, *cum laude*.

Roy McFarland.

Ida May Moore, *cum laude*.

Lottie Marie Riley.

Warren Rice Woodson, *cum laude*.

(B. L., Univ. of Mo., '98.)

Charles Thomas Bell.

George Gordon Robertson.

Margaret Ethel Bogard.

Elizabeth May Sinclair.

Laura Belle Campbell.

Clyn Smith.

Daisy Lonore Gordon.

Edwin Turner.

Don Carlos Guffey.

(A. M., Univ. of Mo., '97; LL. B.,

John Oliver Henderson.

Univ. of Mo., '79.)

(A. B., Park College.)

Margaret Anne Wulfert.

Ida Elizabeth Howard.

Academic Department.**1. Degree of Bachelor of Arts (A. B.).**Bertha Alice Greer, *cum laude*.

Cora Lee Harrison.

Richmond Laurin Hawkins, *cum laude*.

John William McGarvey Major.

Byron McFarland, *cum laude*.

Camella Maud Miller.

Emmet Gerald Alexander.

Henry Stephen Moore.

Charles Thomas Bell.

Roy McFarland.

Laura Belle Campbell.

John Denise Rippey.

Frederick Charles Cleary.

George Gordon Robertson.

Emma Depee.

Merritt Kimbrough Salmon.

Harry McFarland Dungan.

William Henry Seward.

Franklin Young Gladney.

John Fletcher Walmsley.

Jesse Lee Harnage.

Horace Beckley Williams.

2. Degree of Bachelor of Science (B. S.).

Jacobina Brandenberger.

Charles Leonard Parkhurst.

Daisy Lonore Gordon.

Clyn Smith.

Don Carlos Guffey.

Edwin Bennett Wheeler.

3. Degree of Bachelor of Letters (B. L.).Lewis Darwin Ames, *magna cum laude*.

Phillip Leonidas Campbell.

John Crockett Edwards, *cum laude*.

Dudley Steele Conley.

William Casper Hock, *cum laude*.

Lisbon Elwood Durham.

Mary Kline, *cum laude*.

Raymond Saufley Edmonds.

Ida May Moore, *cum laude*.

Robert Bartholow Harshe.

Mary Bassett Potter, *cum laude*.

Ida Elizabeth Howard.

Warren Rice Woodson, *cum laude*.

Elizabeth May Sinclair.

Margaret Ethel Bogard.

Lee Utley.

Margaret Anne Wulfert.

4. *Degree of Master of Arts (A. M.).*

Irvin Victor Barth.

(A. B., Univ. of Mo., '97.)

George Harrison English, Jr.

(A. B., Univ. of Mo., '97.)

John Lawrence Gerig.

(A. B., Univ. of Mo., '98.)

Henry Herrenleben.

(B. L., Univ. of Mo., '97.)

Minnie Katherine Organ.

(B. L., Univ. of Mo., '97.)

Royall Hill Switzler.

(A. B., Univ. of Mo., '98.)

5. *Degree of Master of Science (M. S.).*

Clarence Martin Jackson.

(B. S., Univ. of Mo., '98.)

6. *The Degree of Doctor of Philosophy (Ph. D.).*Charles Thom, *summa cum laude*.

(A. M., Lake Forest Univ.)

III. PRIZES, MEDALS, SCHOLARSHIPS, AND HONORS.

The Dachsel Prize in the School of Engineering.....(Not awarded)

The Prize Essays in the Department of Law—*The Law of Surface Water in Missouri*

First George Harrison English

Second .. William Casper Hock

The Laws Astronomical Medal(Not awarded)

The Prize Essay, Normal Department.....(Not awarded)

The William J. Bryan Medal (Political Science) .Milton Matthews Dearing

The McAnally Medal (English).....(Not awarded)

The Stephens Medal (Oratory).....Daisy Lonore Gordon

The Military Cup, Company B.....Capt. Albert Upp Brandt

The Military Medal.....Pte. Richard Henry Jesse, Jr.

The Marksmanship Medal.....Capt. John Crockett Edwards

The James S. Rollins Scholarship, Department of Medicine.....

..... Clarence Martin Jackson

The James S. Rollins Scholarship, Department of Law.....

.....Gratia Evelyn Woodside

The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Agriculture).....Carrie Ruth Jackson

The James S. Rollins Scholarship, College of Agriculture and Mechanic Arts (School of Engineering)Urban Serenus Marshall

The James S. Rollins Scholarship, Academic Department, A. B.,

..... Rosalie Gerig

The James S. Rollins Scholarship, Academic Department, B. S.,.....

..... Meta Therese Eltzen

Valedictorian in the Medical Department.....Bert Munday

Valedictorian in the Law Department.....Joseph Shelby McIntyre

Valedictorian in the College of Agriculture and Mechanic Arts (School of Engineering) Orville Hume Turner

Valedictorian in the College of Agriculture and Mechanic Arts (School of Agriculture) Guy Alexander Roberts

Valedictorian in the Normal DepartmentBertha Alice Greer

Valedictorian in the Academic DepartmentByron McFarland

The honorary degree of Doctor of Laws (LL. D.) was conferred by the University upon Edwin Clay White, Principal of the Kansas City High School, Kansas City, Mo., and upon Howard Ayers, President of the University of Cincinnati, Cincinnati, Ohio.

(b) *ROLLA, MISSOURI.*

DEGREES.

Bachelor of Science (Mining Engineering.)

George Clough Clark.	Arthur Davis Terrell.
Edwin Thompson Perkins.	Jerrold Roscoe Underwood.
Hermann Otto Schulze.	

Bachelor of Science (Civil Engineering.)

James Otto Hendricks.	Howard Joshua Taylor.
Hermann Otto Schulze.	Francis Joseph Tayman.

Bachelor of Science (Chemistry and Metallurgy.)

Roger Hanson Hatchett.	Walter Ernest Soest.
Herbert Fordyce Rogers.	

Bachelor of Science (General Science).

Fred Hough Perkins.

DIPLOMAS IN THE ACADEMIC DEPARTMENT.

Katherine Cox.	Miriam Heller.
Bessie Marie Dickerson.	

CERTIFICATES.

Mathematics.

Charles Albert Fach.

Surveying.

Henry Jacob Graesser.	Charles Albert Fach.
-----------------------	----------------------

Assaying and Technical Analysis.

Albert Edward Lund.

APPENDIX.

Summer Session of the University.

JUNE 4 TO AUGUST 25, 1900.

The first term of the summer session will begin Monday, June 4, and close Saturday, July 14. During this term courses in French, German, Agriculture and Horticulture, Mathematics, Physics, Shopwork and Drawing will be given. During the second term—July 16 to August 25—the courses in Biology, Chemistry, English, Greek, History, and Latin will be given.

No student will be allowed to take more than two courses during any one term.

A. Courses Offered in the First Term.

(June 4 to July 14.)

1. *French.*

Professor WEEKS.

- (a) Elementary Course.
- (b) Advanced Course.

2. *German.*

Professor HOFFMAN.

- (a) Course for Beginners.
- (b) Advanced Course.

3. *Horticulture and Agriculture.*

Professors WHITTEN and MUMFORD.

- (a) Plant Studies.
- (b) Soil Studies.

4. *Mathematics.*

Assistant Professor DEWOL.

- (a) Advanced Algebra.
- (b) Trigonometry.
- (c) Analytic Geometry.

5. *Physics.*

Professor LIPSCOMB.

- (a) Laboratory Course in General Physics.
- (b) Course in Heat, Light, and Electricity.

6. *Shopwork and Drawing.*

Professor MARX.

- (a) Course for Teachers.

B. Courses Offered in the Second Term.

(July 16 to August 25.)

1. *Biology.*

Professor LEFEVRE.

- (a) General Biology.
- (b) Advanced Course.

2. *Chemistry.*

Professor BROWN or Assistant Professor CALVERT.

- (a) General Inorganic Chemistry.
- (b) Qualitative Chemical Analysis.

3. *English.*

Professor ALLEN.

- (a) English Language.
- (b) English Literature.

4. *Greek.*

Acting Assistant Professor NEWCOMER.

- (a) Elementary Greek.
- (b) Xenophon's Anabasis.

5. *History.*

Acting Assistant Professor VIOLETTE.

- (a) General History.
- (b) Economic History of the United States.

6. *Latin.*

Professor JONES.

- (a) Course for Teachers.
- (b) Course in Elementary Latin.
- (c) Course for Freshmen and Sophomores.

CREDIT FOR WORK.

All students who do work of University grade in the summer session, or work required in any professional course and pass an examination thereon, will receive credit therefor upon the books of the University at the rate of one hour's credit for each three hours of class-room work extending through one term of six weeks. A student may receive a maximum credit of six (6) hours for one term's work, or twelve (12) hours for two terms' work during the summer session.

A certificate will be given to those who devote the whole term of six weeks to the subjects selected and pass a satisfactory examination on the subject-matter as well as on the method.

The grades made by an experienced teacher will be accepted by the State Superintendent of Public Schools in lieu of an examination on such subject for State certificates.

CHARACTER OF THE COURSES.

The courses are of two kinds: (1) Those planned to meet the wants of teachers in High Schools and Academies. (2) Those planned for teachers and other persons who desire to spend a portion of the vacation period in systematic work.

Teachers in the secondary schools will find here an excellent opportunity of reviewing subjects that they teach and of gaining suggestions of new methods, or an opportunity of obtaining University instruction, with credit therefor upon the books of the University.

Statistics show that boards of education are demanding of teachers, year by year greater efficiency and better scholarship. The summer session of the University presents to the teachers of Missouri an opportunity to meet this demand, and at very small cost.

For circular containing full information, address

J. C. JONES,
Chairman of Summer School Committee.

INDEX.

	Page		Page
Academic Department.....	71-97	Art (History of).....	81
Admission.....	90-95	Architecture (School of)	
Approval of Schools.....	90-95	Admission.....	24
Approved Schools.....	90-95	Equipment.....	169
Courses in Detail.....	78-97	Course.....	160-172
Courses open to Freshmen.....	75	Astronomy.....	89-90
Degrees.....	73-74	Athletics.....	54
Faculty.....	71-73	Bacteriology.....	131, 149
Fees.....	43	Board of Visitors.....	18
Hours of the various courses.....	76-77	Board.....	44-46, 69
Scheme of study.....	73-74	Botany.....	94-95, 183
Studies in other Departments.....	74	Bryan Prize.....	49
Studies:		Buildings and Equipment.....	85-90, 61
Animal Physiology.....	95-96	Cadetships.....	51, 129
Archæology, Classical.....	81-82	Calendar.....	111
Astronomy.....	89-90	Certificates.....	47
Botany.....	94-95	Chapel Services.....	89
Chemistry.....	91-92	Chemistry.....	91-92, 190, 193
Economics.....	86-87	Christian Associations:	
Elocution.....	96-97	Young Men's.....	55
English.....	78-79	Young Women's.....	56
Experimental Psychology.....	87	Classical Archæology.....	81-82
Geology and Mineralogy.....	93	Class Honors.....	42
Germanic Languages.....	84-85	Climatology.....	153
Greek.....	61	Clinics.....	116
History.....	86	Club-houses.....	44-46, 69
Latin.....	80	College Agr. & Mech. Arts:	
Mathematics.....	88	Departments.....	185
Philosophy.....	87	Faculty.....	181-183
Physics.....	90	Historical Statement.....	185-186
Romance Languages.....	84-85	Commencement Exercises.....	111
Sociology.....	97	Commercial Studies.....	150
Zoology.....	93-94	Counties Represented.....	218
Admission to the University.....	90-95	Curators.....	12
Academic Department.....	90-95	Date of Meeting.....	111
Agriculture, School of.....	186	Officers.....	12
Department of Education.....	38	Report to Governor.....	1-11
Engineering, School of.....	94, 160	Curators' Scholarships.....	47-48
Graduate Department.....	90, 63	Degrees.....	46-47, 73-74
Law.....	101-104	Departments of the University.....	19, 63
Medical.....	113-115	Academic.....	71-97
Military Science & Tactics.....	196	Agr. & Mech. Arts, College of.....	181-179
From Approved Schools.....	25-28	Education.....	96-100
Advanced Standing.....	25	Law.....	101-111
Agricultural Chemistry.....	148	Medical.....	113-120
Agriculture, School of.....	135-153	Mil. Science & Tactics.....	196-198
Admission.....	135-180	Mines and Metallurgy.....	173-185
Courses.....	138-139	Directions for New Students.....	40
Studies.....	139-140	Discipline.....	40
Agriculture.....	140-141	Doctor of Philosophy.....	65
Agricultural Chemistry.....	148	Drawing.....	150
Bacteriology.....	149	Economics.....	86-87
Botany.....	150	Education (Department of).....	98-100
Chemistry.....	152	Admission.....	98
Climatology.....	153	Certificates.....	98-99
Commercial Studies.....	150	Child Study.....	100
Drawing.....	150	Courses.....	98-100
Economics.....	151	Faculty.....	98
English.....	151	Summer courses.....	100
Entomology.....	146-147	Elective System.....	72
Geology.....	152	Elocution.....	96-97
Horticulture.....	143-146	English.....	78-79
Mathematics.....	151	Engineering, School of.....	160-168
Military Science.....	150-151	Admission.....	161
Physics.....	158	Civil Engineering.....	162-164
Shopwork.....	149	Courses.....	161-163
Veterinary Science.....	149-150	Degrees.....	161
Alumni.....	57-58	Electrical Engineering.....	164-165
Anatomy.....	119	Hydraulic Engineering.....	163
Approval of Schools.....	90-95	Mechanical Engineering.....	163-167
Approved Schools.....	95-96	Sanitary Engineering.....	167-168

	Page.		Page.
Surveying	163	Cadet officers.....	126-127
Enrollment in all dept's.....	212	State cadets, appointment of	129
Entomology.....	148	Supplies, general.....	127
Examiner of Schools.....	80	Uniforms.....	127
Examinations.....	42, 62	Mines and Metallurgy, School of.....	
Entrance.....	24	.....	61-62, 175-185
Expenses.....	43-46, 52, 54, 62	Admission.....	174
Experimental Psychology.....	87	Buildings and Equipment.....	61
Experiment Station.....	153-156	Courses.....	175-185
Faculty, General.....	13-16	Chemistry and Metallurgy,....	178-180
Farm, Agricultural College.....	143	Civil Engineering.....	177-178
Farmers' Winter Courses.....	136	Mining Engineering.....	175-177
Fellowships.....	51, 64	Other Courses.....	180-185
Fellows.....	16-17	Degrees.....	174
Fees and deposits.....	43-46	Expenses.....	62
Free tuition.....	43-44, 47-48, 51	Faculty and officers.....	173
Geology and Mineralogy.....	92	Museums.....	38
Germanic Languages.....	84-85	Agriculture.....	142
Gifts to the University.....	58-60	Classical Archaeology.....	80
Graduate Department.....	63-70	Geology.....	36
Admission.....	63	Zoology.....	36
Academic.....	63-68	Musical Clubs.....	54
College of Agr. & Mech. Arts....	68-69	Normal Schools.....	30
Law.....	69-70	Observatory.....	90
Graduate students.....	20, 63-64	Officers.....	16-17
Graduates of Appr. Schools.....	25-35	Organization.....	39
Graduate Club.....	64	Pathology.....	121
Graduates of 1899.....	215-219	Permanent Provision for the Uni-	
Greek.....	81	versity.....	6-11
Gymnasium.....	54	Philosophy.....	87
History.....	86	Physical Culture.....	54
Historical Statement.....	19	Physics.....	90-91, 132
Honorary Degrees.....	47	Physiology.....	96-98
Honors.....	42	Preachers and Lecturers.....	18
Horticulture.....	143-146	Prizes.....	47-49
Hospital.....	37, 116	Publications, students'.....	35
Hygiene.....	122	Religious exercises.....	39
Journalism, School of.....	97	Reports.....	43, 62
Laboratories.....	38	Rollins Aid Fund.....	49-50
Laboratory of Exper. Phonetics.....	84	Rollins Scholarships.....	50-51
Latin.....	80	Romance Languages.....	83-84
Law Department:		Schemes of Studies.....	
Admission.....	101-104	.....	72-74, 118-119, 128, 139, 157, 162-163, 170-172, 175-185
Advantages.....	109-110	Scholarships, Curators'.....	47-48
Courses.....	105-108	Scholarships, Rollins prize.....	50
Degrees and Honors.....	108-109	Shops.....	159
Faculty.....	101	Societies.....	55-58, 62
Fees.....	111	Sociology.....	97
Methods of Instruction.....	107-108	Special Students.....	25
Lecturers.....	18	Stenography.....	150
Libraries.....	37, 61	Steward.....	17
Literary societies.....	55, 62	Students, List of.....	186-210
Location.....	85	Academic.....	186
Mathematics.....	88, 151	Agriculture.....	197
Matron.....	40	Architecture.....	202
Master of Arts.....	64	Education.....	193
Mechanic Arts, School of.....	156-160	Engineering.....	201
Course.....	157	Graduate.....	186
Facilities.....	159	Law.....	194
Sloyd.....	157-158	Medical.....	196
Medical Department:		Mines and Metallurgy.....	203
Admission.....	113-115	Summer School.....	206
Course.....	118-119	Studies, Regulations in regard to..	40-42
Clinical Advantages.....	116	Stephens Medal.....	48
Degrees.....	124	Summaries.....	211-213
Faculty.....	112	Summer Session.....	220
Fees and Expenses.....	125	Tuition.....	43
Laboratories.....	116-118	Valedictorian.....	42
Studies.....	119-124	Veterinary Science.....	143-149
Military Science & Tactics:		Women, special provision for.....	40
Admission.....	126	Y. M. C. A.....	55-56
Course.....	128	Y. W. C. A.....	56
Certificate.....	129	Zoology.....	92-94
Regulations.....	130		

